Rayat Shikshan Sanstha's

**KARMAVEER BHAURAO PATIL MAHAVIDYALAYA, PANDHARPUR**

**(Autonomous)**

**Department of Commerce**

**B.Com. I**

**Course Outcomes (COs)**

| Paper/Course Name<br>Course Code | COs | Semester-I |
|---|---|---|
| | | *Student will be able to*: |
| Businees Management Paper I<br>KBP-C-BM-113 | **CO 1** | understand basic principles of management contribution of various management thinkers to the development of Management and some management functions mainly planning decision making and organizing. |
| Financial Accounting paper I<br>KBP-C-FAcc-114 | **CO 2** | understand the accounting process of partnership firm with principles, rules, laws specially for partnership Act 1932 and understand the process of manual to computerized accounting. |
| Marketing Management paper I<br>KBP-C-MM-115 | **CO 3** | to understand basic concepts, functions of marketing and skills of marketing plan for new product development and understand the process of marketing research. |
| Insurance paper I<br>KBP-C-Ins-116 | **CO 4** | Understand the principles of insurance, contract, the procedure taking the policy life insurance also aware employment opportunities in public and private insurance business. |
| | | **Semester II** |
| Businees Management paper II<br>KBP-C-BM-123 | **CO 5** | understand the functions performed by the management to achieve the objectives of business enterprise mainly motivation, leadership, directing and controlling. |
| Financial Accounting paper II<br>KBP-C-FAcc-124 | **CO 6** | understand the concepts of computerized accounting with GST and understanding the accounting procedure for conversion of single entry system into Double entry System, accounting of dependent branch. |
| Marketing Management paper II<br>KBP-C-MM-125 | **CO 7** | Understand the marketing principles and practices both for goods and services including recent era in marketing and understand strategies of pricing of product. |
| Insurance paper II<br>KBP-C-Ins-126 | **CO 8** | understand the concepts of fire and marine insurance and the role of insurance sector in economic development and role of IRDA in regulating insurance business in India. |

**B.Com. II**

| Paper/Course Name<br>Course Code | COs | Semester-III |
|---|---|---|
| | | *Student will be able to*: |
| Corporate Accounting<br>KBP-C- CAcc-233 | **CO 1** | Understand the accounting treatment for issue of equity and preference shares**,** understanding the rules and principals for preparing the financial statements of company organization as per the provisions in company Act 2013 also learn the various skills for application of computerized Accounting. |
| Fundamentals of Entrepreneurship<br>KBP-C- FE-234 | **CO 2** | understand significance of entrepreneurship with recent trends different theories in entrepreneurship and understanding of skills required for preparation of project report. |
| Money and Financial System<br>KBP-C- MFS-235 | **CO 3** | An understanding the Indian banking system with its function including recent trends and issues in banking system. |
| | | **Semester IV** |
| Corporate Accounting<br>KBP-C- CAcc-243 | **CO 4** | Understand the need and methods of valuation of shares and accounting treatment for the transaction relating to assets realized and payment made as per priority in liquidation of Companies. |
| Fundamentals of Entrepreneurship<br>KBP-C- FE-244 | **CO 5** | understand the requirement for starting a new business also the understanding skills required to become successful entrepreneur. |
| Money and Financial System<br>KBP-C-MFS-245 | **CO 6** | Understand various e-banking practices in India and understanding the role of Reserve Bank India in regulating the Indian banking business. |

**M.Com. I**

| Paper/Course Name<br>Course Code | COs | Semester-I |
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| | | *Student will be able to*: |
| Management Theories, Practices and Organisational Behaviour<br>Paper I- KBP-C-PG-MTPOB-411 | **CO 1** | Understand an individual and group behavior and understanding management theories and thoughts. |
| Advance Costing Paper I<br>KBP-C-PG-COST I-414 | **CO 2** | Understanding the concept and principles of costing, recording of cost with various elements of cost also understanding the ascertainment of cost per unit as well as total cost of production including methods of costing. |

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| | | **Semester II** |
| Management Theories, Practices and Organisational Behaviour Paper II- KBP-PG-C-MTPOB-421 | **CO 3** | Understanding the various approaches to leadership styles and characteristics in leadership in management also understanding motivation theories, organization culture and conflicts. |
| Research Methodology Paper II-KBP-C-PG-RM-423 | **CO 4** | understanding of research procedure followed for solving the different managerial problems. |
| Advance Costing Paper II KBP-C-PG-COST II-424 | **CO 5** | Understanding the various techniques of cost such as marginal costing, standard costing, and budgetary control also Understanding application of costing techniques in decision making process. |
| Functional Areas of Management KBP-C-PG-FAM-425 | **CO 6** | understand the significance and functions various management particularly Human Resources Management, Financial Management, Production Management and Marketing management. |

**M.Com. II**

| **Paper/Course Name Course Code** | **COs** | **Semester-III** |
|---|---|---|
| | | *Student will be able to*: |
| Business Finance KBP-PG-C-BF-531 | **CO 1** | understand nature, structure and issues in business finance including financial planning and sources of business finance with significance of foreign capital and new government policy. |
| Management Accounting KBP-PG-C-MA-532 | **CO 2** | understand functions of management accounting and understanding the preparation of funds flow and cash flow statements also understanding the computing financial ratios and its interpretation. |
| Adv. Costing Paper III KBP-PG-C-COSTIII-533 | **CO 3** | understand the skills and techniques of managing fund and cash in addition to this they also understand analysis of financial statements. |
| Adv. Costing Paper IV KBP-PG-C-COSTIV-534 | **CO 4** | understand research procedure followed for solving the different managerial problems. |
| | | **Semester IV** |
| Business Finance KBP-PG-C-BF-541 | **CO5** | Understand the functions of stock exchange, methods of marketing of securities also understanding function of SEBI, credit rating and new dimensions in business finance. |
| Management Accounting KBP-PG-C-MA-542 | **CO 6** | Understand the application of management accounting techniques such as marginal costing, standard costing, budgetary control and its application in decision making process. |
| Adv. Costing Paper III KBP-PG-C-COSTIII-543 | **CO 7** | understand the skills in investment decisions, various model in dividend policy and cost of capital. |
| Adv. Costing Paper IV KBP-PG-C-COSTIII-544 | **CO 8** | understand methods of analysis and interpretation of data and skills in preparing good project report. |

Rayat Shikshan Sanstha's

**KARMAVEER BHAURAO PATIL MAHAVIDYALAYA, PANDHARPUR**

**(Autonomous)**

**Department of Commerce**

**Programme Specific Outcomes (PSOs)**

| Programme Name | PSOs | Programme Specific Outcomes |
|---|---|---|
| **B.Com** | | *Student will be able to*: |
| | **PSOs 1** | understand basic principles of business management understanding the thoughts of management thinkers and their contribution in development of management with various functions performed by the management to achieve an objectives of business enterprise. |
| | **PSOs 2** | understand basic principles of insurance and practices and skills of life insurance and general insurance with the role of LIC in GIC. |
| | **PSOs 3** | Understand the marketing principles and practices both for goods and services including recent era in marketing and significance and process of marketing research. |
| | **PSOs 4** | understand concept and recent trends in entrepreneurship and understanding of basic skills required in preparation of project report, skill required to become successful entrepreneurs. |
| | **PSOs 5** | understand Indian banking system, practices, functions and financial markets in India. |
| | **PSOs 6** | understand the entire accounting process of sole proprietor partnership firm cooperative societies banking company and company form of business organization with principles, rules, laws specially banking company act 1949 and company act 2013. |
| | **PSOs 7** | understand the basic principles of cost accounting particularly elements of cost and understanding the skill and techniques required for cost accounting process. |
| | **PSOs 8** | Understand the different areas of management as a part of industrial management and skills in inventory management and to improve the productivity. |
| | **PSOs 9** | understand life insurance and general Insurance practices in India particularly types of policies and settlements of claims. |

| Programme Name | PSOs | Programme Specific Outcomes |
|---|---|---|
| **M.Com.** | | *Student will be able to*: |
| | **PSOs 1** | understand individual and group behavior, management theories, thoughts and different approaches of leadership in the management. |
| | **PSOs 2** | understanding of students for skill for recording of cost accounting specially elements of cost its controlling techniques and ascertaining the cost per unit and total cost of production. |
| | **PSOs 3** | understand the significance and functions various management particularly Human Resources Management, Financial Management, Production Management and Marketing management. |
| | **PSOs 4** | An understanding of research procedure followed for solving the different managerial problems. |
| | **PSOs 5** | An understanding the financial planning sources of finance and new dimensions of business finance with focus on stock exchange, marketing of securities and foreign capital. |
| | **PSOs 6** | understand application of management accounting in decision making process. |

Rayat Shikshan Sanstha's

**KARMAVEER BHAURAO PATIL MAHAVIDYALAYA, PANDHARPUR**

**(Autonomous)**

**Course Outcomes**

**U.G. Ist Year**

# Compulsory Subjects

| | | | |
|---|---|---|---|
| **English** | **English Compulsory: B A/B Com /B Sc** | | **Sem.-I** |
| | | CO 1 | Develop the vocabulary and communication skills |
| | | CO 2 | Classify forms of words |
| | | CO 3 | Summarize the prose and paragraphs |
| | | | **Sem.-II** |
| | **English Compulsory: B A/B Com/B Sc** | CO 1 | Develop the vocabulary and communication skills |
| | | CO 2 | Classify forms of words |
| | | CO 3 | Summarize the prose and paragraphs |
| **Marathi** | **साहित्य दर्पण व कौशल्याधारित घटक** | | **Semester-I** |
| | | CO 1 | विद्यार्थ्यामध्ये मराठी भाषासाहित्याची जाणीव आणि अभिरुची समृध्द होईल , |
| | | CO 2 | विद्यार्थ्यांमध्ये मराठी भाषा प्रभावीपणे वापरण्याची क्षमता विकसित होईल. |
| | | CO3 | मराठी भाषेतील लेखक आणि त्यांच्या साहित्याचा परिचय होईल . |
| | | CO4 | विद्यार्थ्यांमध्ये राष्ट्रीय एकात्मतामानवी मूल्ये यांची जागृती होईल , |
| | | CO5 | विद्यार्थ्यामध्ये निवेदन कौशल्य विकसित होईल. |
| | | | **Semester-II** |
| | | CO 1 | विद्यार्थ्यामध्ये मराठी भाषा .साहित्याची जाणीव आणि अभिरुची समृध्द होईल , |
| | | CO 2 | विद्यार्थ्यांमध्ये मराठी भाषा प्रभावीपणे वापरण्याची क्षमता विकसित होईल. |
| | | CO3 | मराठी भाषेतील लेखक आणि त्यांच्या साहित्याचा परिचय होईल . |
| | | CO4 | विद्यार्थ्यांमध्ये राष्ट्रीय एकात्मतापर्यावरण व निसर्गविषयक जाणीव जागृती होईल ,मानवी मूल्ये , |
| | | CO5 | विद्यार्थ्यांना शुद्धलेखन लिहिता येईल. |

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| **Hindi** | **Comp. Hindi (साहित्य सुरभि)**<br>**KBP-A- UG-HIN- 11** | | **Semseter-I** |
| | | **CO 1** | छात्र कालजयी रचना और रचनाकारों से परिचित हुए । |
| | | **CO 2** | छात्र कार्यालयीन शब्दावली से अवगत हुए । |
| | | **CO 3** | छात्र संक्षेपण और अनुवाद कौशल से अवगत हुए । |
| | | **CO 4** | छात्रों की विचारक्षमता और कल्पनाशीलता बढ़ावा मिला । |
| | | | **Semester II** |
| | **Comp. Hindi (साहित्य सुरभि)**<br>**KBP-A-UG- HIN- 12** | **CO 1** | छात्र वाणिज्य विषयक पत्राचार एवं कौशल से अवगत हुए । |
| | | **CO 2** | छात्र प्रतिनिधि गद्यकार तथा कवियों से परिचित हुए । |
| | | **CO 3** | छात्र में गद्य विधाओं की समीक्षा दृष्टि का विकास हुआ । |
| | | **CO 4** | छात्र काव्य के भाव पक्ष और कला पक्ष से अवगत हुए । |
| **STD** | Introduction to STD | | Semster-I |
| | | CO 1 | Student will able to define the concept of Science and Technology |
| | | CO 2 | Student will able to Introduce the great Indian and foreign scientist. |
| | | CO 3 | Student will able to summaries the development of science and technology |
| | | CO 4 | Student will able to understand the conventional and non conventional energy sources in India |
| | **Introduction to STD**-KBP-A-STD-122 | | **Semester-II** |
| | | CO 1 | Student will able to understand the nutrients in food. |
| | | CO 2 | Student will learn about the history of Information and technology in India |
| | | CO 3 | Student will get to know our earth and solar system |

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| | | CO 4 | Student will be aware of environmental pollution and global warming |
| S.M. | **Scientific Methods KBP-A-ECO-112** | | Semester-I |
| | | **CO 1** | Understand the concepts of Scientific Method |
| | | **CO 2** | Identify the Nature Cycle |
| | | **CO 3** | Utilize the Method of Scientific Investigation in Research |
| | | **CO 4** | Identify the Techniques of Social Research |
| | | | Semester-II |
| | **Scientific Method-KBP-A-ECO-122** | | ***Semester-II*** |
| | | **CO 1** | Identify the hypothesis in research work |
| | | **CO 2** | Understand the kinds of laws nature |
| | | **CO 3** | Explain the importance of Scientific attitude in ecological balance |
| | | **CO 4** | Develop the computer knowledge and Internet |

# Optional Subjects

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| **Marathi** | **साहित्यरंग व कौशल्याधारित घटक** | | **Sem-I** |
| | | CO 1 | कथा या वाङ्मय प्रकारचे आकलन होईल. |
| | | CO 2 | कथा वाङ्मय प्रकारात लेखन करता येईल. |
| | | CO 3 | कथा साहित्य प्रकाराचे घटक आत्मसात करतील . |

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| | | CO4 | प्रत्यक्ष सारांश लेखन करतील . |
| | | | **Semester-II** |
| | **साहित्यरंग व कौशल्याधारित घटक** | CO 1 | कविता या वाङ्मय प्रकारचे आकलन होईल. |
| | | CO 2 | कविता वाङ्मय प्रकारात लेखन करता येईल |
| | | CO 3 | कविता साहित्य प्रकाराचे घटक आत्मसात करतील . |
| | | CO4 | निबंध लेखन कौशल्य आत्मसात करतील . |
| **English** | **English: Introduction to Literature KBP-UG-A-OENG1101** | | **Sem-I** |
| | | CO 1 | Define various literary forms. |
| | | CO 2 | Develop reading and interpreting literary texts |
| | | CO 3 | Analyse of short story as a literary form. |
| | | | **Semester-II** |
| | **Introduction to Literature KBP-UG-A-OENG1102** | CO 1 | Interprete linguistic terms. |
| | | CO 2 | Knowledge of structural and analytical techniques. |
| | | CO 3 | Compare various forms of Poetry |
| **Linguistics** | **Introduction to Linguistics KBP-UG-A-LIN1101** | | **Semester-I** |
| | | CO 1 | Interpret linguistics as a discipline. |
| | | CO 2 | describe basics of linguistics and the key concepts. |
| | **Opt. Ling: Introduction to Linguistics KBP-UG-A-LIN1102** | | **Sem.-II** |
| | | CO 1 | Explain the structure of words and word formation processes. |
| | | CO 2 | Apply form and function of Phrases |
| **Hindi** | **(साहित्य रत्न) -KBP-A- UG- HIN-111** | | **Semester-I** |
| | | **CO 1** | छात्र हिंदी साहित्य की श्रेष्ठ रचना और रचनाकारों से परिचित हुए । |
| | | **CO 2** | छात्र भारतीय संस्कृति एवं ग्राम जीवन से अवगत हुए । |

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| | | **CO 3** | छात्र में भाषाई कौशल विकसित हुए । |
| | | **CO 4** | छात्र वर्तमान साहित्य में आए परिवर्तनों से परिचित हुए |
| | **Opt. Hindi (साहित्य रत्न)- KBP-A-UG- HIN- 112** | | **Semester II** |
| | | **CO 1** | छात्र हिंदी साहित्य की विविध विधाओं से परिचित हुए । |
| | | **CO 2** | छात्र में विज्ञापन लेखन की क्षमता का विकास हुआ । |
| | | **CO 3** | छात्र हिंदी शब्द संपदा से परिचित हुए । |
| | | **CO 4** | छात्र हिंदी व्याकरण से परिचित हुए । |
| **Political Science** | Constitutional Government and Democracy in India KBP-A-POL -111 | | **Semester-I** |
| | | CO 1 | interpret historic background and characteristics of the Indian Constitution |
| | | CO 2 | adapt Fundamental Rights and duties |
| | | CO 3 | illustrate structure and functioning of Indian Parliamentary |
| | | CO 4 | define judicial process in India |
| | Constitutional Government and Democracy in India KBP-A-POL -122 | | **Semester-II** |
| | | CO 1 | explain aspects of Indian federal System |
| | | CO 2 | interpret election process in India |
| | | CO 3 | analyse party politics in India |
| | | CO 4 | discuss influencing factors on Indian Politics |
| **Geography** | **Physical Geography GEO-111-Paper-I** | | **Semester-I** |
| | | **CO 1** | Understand the introduction, nature and scope of physical geography |
| | | **CO 2** | Summarize the Interior of the Earth, earthquakes and volcanoes. |
| | | **CO 3** | Define the Denudation and erosional-depositional movements of river |

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| | | **CO 4** | Analyze composition and structure of atmosphere |
| | **Human Geography GEO-121- Paper II** | | **Semester-II** |
| | | **CO 1** | Understand the man and environment relationship |
| | | **CO 2** | Describe the introduction, nature and scope of human geography |
| | | **CO 3** | Analyzing growth, distribution and problems of Population and Settlement |
| | | **CO 4** | Summarize the sustainable agriculture and agro-tourism |
| **History** | Rise of the Maratha Power (1600-1707) KBP-A-HIS-111- **Paper: I** | | **Semester-I** |
| | | CO 1 | understand reasons why the Maratha power arise in Maharashtra |
| | | CO 2 | understand the medieval social, eco, religious conditions of Maharashtra |
| | | CO 3 | Describe how Chatrapati Shivaji Maharaj established Hindavi swaraj in Maharashtra |
| | | CO 4 | how chatrapati Sambhaji Maharaji maintained his empire by fighting with other power |
| | Polity, Society, and Economy under the Marathas KBP-A-HIS-122- **Paper: II** | | **Semester-II** |
| | | CO 1 | compare the administration of king Shivaji with today's administration |
| | | CO 2 | understand about Shiva era trade, industry and agriculture |
| | | CO 3 | understand about the origins of Varkari Movement |
| | | CO 4 | understand how Shivaji Maharaj established a secular state |
| **AIHC** | **History of Ancient India (Prehistoric and Proto historic Period Up to 650 A. D.))Part I(** | | **Semester-I** |
| | | CO 1 | classify the tools that are useful for the study of ancient Indian history. |
| | | CO 2 | Describe the development of stone age human culture. |

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| | KBP-A-AIHC -111- **Paper: I** | CO 3 | evaluate the Indus culture from an analytical point of view. |
| | | CO 4 | observe the development of Vedic culture. |
| | **History of Ancient India (Prehistoric and Proto historic Period Up to 650 A. D.)** **)Part II(** KBP-A-AIHC -122- **Paper: II** | | **Semester-II** |
| | | CO 1 | Describe the extent of the Magadha Empire. |
| | | CO 2 | Explain how Maurya Empire first time applied the system of organized empire. |
| | | CO 3 | analyze the Golden age of Gupta Empire. |
| | | CO 4 | explain the students different Dynasty in Ancient History. |
| **Education** | **Philosophical Foundation of Education-** KBP-A- EDU -111 | | **Sem. -I –** |
| | | Co1 | Define Philosophy and Education |
| | | Co2 | Explain the relation of Philosophy with Education |
| | | Co3 | Explain the concept of Activity Based Curriculum |
| | | Co4 | Compare the aims and objectives of Primary Education with present objectives |
| | | Co5 | Compare the aims and objectives of Secondary Education with present objectives |
| | | Co6 | Compare the aims and objectives of Higher Education with present objectives |
| | | Co7 | Describe the causes of indiscipline |
| | | Co8 | Compare the remedies suggested by different committees for Reducing indiscipline |
| | | Co9 | Compare the Education work of Karmaveer Bhaurao Patil and |

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| | | | Mahatma Phule |
| | **Sociological Foundation of Education -** KBP-A- EDU -122 | | **Sem. -II –** |
| | | Co1 | Explain the relationship between Sociology and Education |
| | | Co2 | Explain the concept of Social Change |
| | | Co3 | Correlate the causes of Social Change with present situation |
| | | Co4 | Compare the advantages and disadvantages of T.V. and Press |
| | | Co5 | Uses Internet in daily life for gaining knowledge |
| | | Co6 | Compare the characteristics of Primary and Secondary Groups. |
| | | Co7 | Examine the cases of Educational Problems in urban and rural areas |

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| **Psychology** | **Introduction to Psychology KBP-A-PSY-111-Paper-I** | | **Semester-I** |
| | | CO 1 | apply the basic knowledge of behavioral aspects |
| | | CO 2 | understand the modern trends of psychology |
| | | CO 3 | applie the research methods used in psychology |
| | | CO 4 | develop interests in further studies in psychology |
| | **Foundation of Psychology KBP-A-PSY-122-Paper-II** | | **Semester II** |
| | | CO 1 | interpret the learning and memory process |
| | | CO 2 | apply the various learning methods |
| | | CO3 | understand theories and measures of personality |
| | | CO4 | understand theories and measures of intelligence |
| | | CO5 | indentify the Individual differences of mentally challenged and Gifted people. |
| **Economics** | **Indian Economy KBP-A-ECO-111** | **CO 1** | Explain the characteristics of Indian Economy |
| | | **CO 2** | Understand the causes and measures of Poverty and Unemployment |

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| | | **CO 3** | Identify the Concepts of National Income |
| | | **CO 4** | Identify the Problems of Agricultural Sector in India |
| | **Indian Economy**<br>**KBP-A-ECO-122** | **CO 1** | Understand the Importance of Industrial Sector |
| | | **CO 2** | Examine the Concept of LPG |
| | | **CO 3** | Compare the Problems of Indian Economy and Maharashtra Economy |
| | | **CO 4** | Analyze the Basic Problems before Cooperation in Maharashtra |

**Rayat Shikshan Sanstha's**

# Karmaveer Bhaurao Patil Mahavidyalaya, Pandharpur (Autonomous)

## Cos and PSOs of Second Year Graduation Course

| | | | |
|---|---|---|---|
| **English Compulsory** | English Compulsory: B A/B Com | | Semester-III |
| | | CO 1 | Demonstrate the skills of communication |
| | | CO 2 | Understand the social commitment and value of good communication |
| | | CO 3 | Apply the knowledge in writing from time to time |
| | | CO 4 | Apply communication skills in daily life |
| | English Compulsory: B A/B Com | | Semester-IV |
| | | CO 1 | Demonstrate the skills of communication |
| | | CO 2 | Understand the social commitment and value of good communication |
| | | CO 3 | Apply the knowledge in writing from time to time |
| | | CO 4 | Apply communication skills in daily life |

# Inter Disciplinary Subjects

| | | | |
|---|---|---|---|
| Linguistics | Linguistics ( IDS) | | Semester-III |
| | | CO 1 | Apply the basic knowledge of linguistics |
| | | CO 2 | Define the basic concepts of linguistics |
| | | CO 3 | Apply knowledge of linguistics in day today use of English |
| | Linguistics ( IDS) | | Semester-IV |
| | | CO 1 | Apply the basic knowledge of linguistics |
| | | CO 2 | Define the basic concepts of linguistics |
| | | CO 3 | Apply knowledge of linguistics in day today use of English |
| **Hindi** | **प्रयोजनमूलक हिंदी KBP-A-UG- HIN- 230** | | **Semester-III** |
| | | **CO 1** | छात्र हिंदी के व्यावहारिक पक्ष से परिचित हुए । |
| | | **CO 2** | छात्र में राष्ट्रभाषा के प्रति रूचि उत्पन्न हुई । |

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| | | **CO 3** | छात्र कार्यालयीन पत्राचार से परिचित हुए । |
| | **KBP-A- UG- HIN- 240** | | **Semester IV** |
| | | **CO 1** | छात्र अनुवाद के महत्त्व को समझते है । |
| | | **CO 2** | छात्र में हिंदी के माध्यम से रोजगार परक कौशल विकसित हुए । |
| | | **CO 3** | छात्र में पटकथा एवं संवाद लेखन का कौशल विकसित हुआ । |
| **HSRM I.D.S** | **History of Social Reform in Maharashtra[IDS] KBP-A-UG-HIS- HSRM-230 IDS** | | Semester-III |
| | | CO 1 | Relate with Social Changing circumstances in Modern Maharashtra |
| | | CO 2 | Apply Values of Social Justice and equality. |
| | | CO 3 | Understand the Importance of Social Reformers Contribution |
| | | CO 4 | understand Social Conditions of the nineteenth century in Maharashtra. |
| | **History of Social Reform in Maharashtra[IDS] KBP-A-UG-HIS-HSRM-240** | | **Semester-IV** |
| | | CO 1 | understand the function of Chhatrapati Shahu Maharaj |
| | | CO 2 | compare the contribution of different Social Reformers. |
| | | CO 3 | analyze Modern women took part in Social Reformers. |
| | | CO 4 | Explain Dr. Babasaheb's thought to students in Modern times. |
| **A.I.H.C.** | Political and Cultural History of Ancient India up to C.A.D.-650. KBP-A-UG- AIHC -IDS.- 230 | | Semester-III |
| | | **CO 1** | classify the different sources of Ancient India. |
| | | **CO 2** | understand the knowledge of Ancient Indus Valley Civilization. |
| | | **CO 3** | adapt the Vedic Knowledge in Ancient times. |

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| | | **CO 4** | introduce the students stone age Civilization. |
| | **Political and Cultural History of Ancient India up to C.A.D.-650.** KBP-A-UG- AIHC -IDS.- 240 | | Semester-IV |
| | | **CO 1** | Describe the extent of the Magadha Empire. |
| | | **CO 2** | understand that Maurya Empire first time applied the system of organized empire. |
| | | **CO 3** | analyze the Golden age of Gupta Empire. |
| | | **CO 4** | explain the students different Dynasty in Ancient History. |
| **P.A.** | Public Administration KBP-A-POL - 230 | | Semester-III |
| | | CO 1 | define meaning and nature of Public Administration |
| | | CO 2 | explain Principles of Organization |
| | | CO 3 | classify Unites of Organization |
| | | CO 4 | evaluate challenges before Public Corporation |
| | Public Administration KBP-A-POL - 240 | | Semester-IV |
| | | CO 1 | explain financial administration and budgetary procedure in India |
| | | CO 2 | define meaning and features of Public Policy |
| | | CO 3 | Apply RTI and Citizen Charter |
| | | CO 4 | Identify social welfare policies of government |
| **Child Psy.** | **Child Psychology KBP-A-UG-CPSY-230** | | **Semester-III** |
| | | CO 1 | apply the basic knowledge of Developmental aspects |
| | | CO 2 | understand the Stages of Development |
| | | CO 3 | understand the modern trends of Child Development |
| | | CO 4 | Apply the research methods used in Child Psychology |

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| | | CO5 | create interests in further studies in Child Psychology |
| | | CO6 | apply the knowledge of normal prenatal Development and Birth Process |
| | **Child Development KBP-A-UG-CPSY-240** | | **Semester IV** |
| | | CO 1 | Understand the Cognitive Development in Childhood |
| | | CO 2 | explain the socioemotional Development in Childhood |
| | | CO3 | identify Cognitive changes of middle and late Childhood |
| | | CO4 | analyze the Developmental changes of Childhood |
| | | CO5 | compare the Development changes of Early and late childhood |
| Tourism | Introduction to Tourism | | Semester-III |
| | | **CO 1** | Acquire the basic concept of Tourism Geography. |
| | | **CO 2** | Understand the factor affecting the Tourism Geography. |
| | | **CO 3** | Familiarize the classification, marketing, infrastructure & impact of Tourism |
| | Tourism in India A-TOUR-240 | | Semester-IV |
| | | **CO 1** | Acquire the student with basic concept of Tourism development in India. |
| | | **CO 2** | Familiarize the student about Geographical, Historical, Religious and cultural Tourist Places in India. |
| | | **CO 3** | Prepare the Tourism planning and tourist leaflets. |
| **Cooperation** | Cooperation KBP-A- ECO-23 | | **Semester-III** |
| | | **CO 1** | Identify the features and principles of cooperation |
| | | **CO 2** | Understand the role of cooperation in rural development |
| | | **CO 3** | Evaluate of cooperative movement in India |
| | Cooperation KBP-A- ECO-24 | | Semester-IV |
| | | **CO 1** | Identify the role of national agencies in the development of cooperative movement |
| | | **CO 2** | Discuss on the problems and prospects of credit and non credit cooperative societies in India |

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| | | **CO 3** | Evaluate the cooperative movement in Maharashtra |

# Optional Subjects

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| Marathi | कादंबरी वाङ्मय प्रकार आणि उपयोजित मराठी नेमलेली साहित्यकृती : (कादंबरी) वारणेचा वाघ, अण्णाभाऊ साठे, विनिमय पब्लिकेशन्स, मुंबई | | Semester-III-Paper-III |
| | | CO1 | . कादंबरी या वाङ्मय प्रकाराचे वेगळेपण लक्षात येईल. |
| | | CO2 | कादंबरी निर्मितीतील लेखकाचे महत्त्व समजून घेतील. |
| | | CO3 | कादंबरीतील आशय व अनुभव अवगत होईल. |
| | | CO4 | सूत्रसंचालन तथा कार्यक्रमाचे नियोजन करता येईल. |
| | कविता वाङ्मय प्रकार आणि काव्यास्वाद नेमलेली साहित्यकृती सेतू : (कवितासंग्रह), वसंत बापट, पॉप्युलर प्रकाशन, मुंबई | | Semester-III-Paper-IV |
| | | CO1 | कविता या वाङ्मय प्रकाराची ओळख होईल. |
| | | CO2 | मराठी कवितेची वाटचाल समजून घेता येईल. |
| | | CO3 | कवितेतील प्रतिमा, प्रतीके यांचा अनुबंध आशयानुरूप आकलन होईल. |
| | | CO4 | कवितेची शैली, रचनाबंध यांचे वेगळेपण लक्षात येईल |
| | | CO5 | काव्यास्वाद व काव्य रसग्रहण यांची माहिती होईल. |
| | ललित गद्य व उपयोजित मराठी नेमलेली साहित्यकृती :हिरव्या वाटा (ललित गद्य), निर्मलकुमार फडकुले | | Semester-IV -Paper-V |
| | | CO1 | ललित गद्य प्रकाराची ओळख होईल. |
| | | CO2 | ललित गद्याचे प्रकार, उद्गम, विकास व विस्ताराची चर्चा करतील. |
| | | CO3 | ललित गद्याचे समकालीन स्वरूप लक्षात येईल |
| | | CO4 | ललित गद्यातील भावसौंदर्य समजेल |
| | | CO5 | उपयोजित मराठीतील घटक अवगत होतील |

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| | नाटक वाङ्मय प्रकार आणि उपयोजित मराठी नेमलेली साहित्यकृती : प्रेमा तुझा रंग कसा ?, (नाटक वसंत कानेटकर (, पॉप्युलर प्रकाशन, मुंबई | | Semester-IV -Paper-VI |
| | | CO1 | नाटक या वाङ्मय प्रकाराची ओळख होईल. |
| | | CO2 | नाटकाचे विविध घटक समजावून घेतील |
| | | CO3 | मराठी नाटकाची वाटचाल समजून घेतील. |
| | | CO4 | उपयोजित मराठीतील घटक समजावून घेतील. |
| | | CO5 | अहवाल लेखनाचे स्वरूप लक्षात येईल. |
| **Hindi** | **Paper No. 3**<br>**आधुनिक हिंदी गद्य : कहानी एवं व्यावहारिक हिंदी KBP-A-UG- HIN-231-** | | Semester-III Paper-III |
| | | **CO 1** | छात्र हिंदी कहानियों से परिचित हुए । |
| | | **CO 2** | छात्र में आधुनिकता बोध और नए मूल्यों के प्रति देखने का नजरिया विकसित हुआ । |
| | | **CO 3** | छात्र समकालीन परिवेश और जीवन यथार्थ से परिचित हुए । |
| | **Paper No. 4**<br>**मध्ययुगीन हिंदी काव्य व्याकरण एवं लेखन KBP-A- UG- HIN- 241-** | | **Semester III-Paper-IV** |
| | | **CO 1** | छात्र भक्तिकालीन काव्य धाराओं से परिचित हुए । |
| | | **CO 2** | छात्र रीतिकालीन कविता के माध्यम से शृंगार एवं वीर रस से परिचित हुए । |
| | | **CO 3** | छात्र भक्ति तथा रीतिकालीन काव्य के भाव पक्ष और कला पक्ष से अवगत हुए । |
| | **Paper No. 5**<br>**आधुनिक हिंदी गद्य : एकांकी एवं व्यावहारिक हिंदी- KBP-A-UG-HIN- 232** | | **Semester-IV- Paper-V** |
| | | **CO 1** | छात्र हिंदी एकांकी विधा से परिचित हुए । |
| | | **CO 2** | छात्र समकालीन परिवेश और मानवीय समाज जीवन से परिचित हुए । |
| | | **CO 3** | छात्र एकांकी विधा के रंगमंच से परिचित हुए । |
| | **Paper No. 6**<br>**आधुनिक हिंदी काव्य** | | **Semester IV- Paper-VI** |
| | | **CO 1** | छात्र आधुनिक हिंदी साहित्य की पृष्ठभूमि से परिचित हुए । |

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| | **व्याकरण एवं लेखन - KBP-A- UG- HIN-242** | **CO 2** | छात्र आधुनिक काव्य धाराओं से परिचित हुए । |
| | | **CO 3** | छात्र आधुनिक हिंदी काव्य कला से परिचित हुए । |
| English | Opt. British Literature KBP-UG-A-ENG2303 | | Semester-III Paper-III |
| | | CO 1 | Classify British Literature and writers. |
| | | CO 2 | Apply process of literary and critical interpretation of the texts. |
| | | CO 3 | Compare the history of British Literature with other literature. |
| | Opt. Indian Literature in English KBP-UG-A-ENG2304 | | Semester-III -Paper-IV |
| | | CO 1 | Acquaint with different literary forms practiced in India in English language. |
| | | CO 2 | Initiate reading skills of Indian Literature in English. |
| | | CO 3 | Understand the Indian English literature |
| | Opt. Introduction to Language KBP-UG-A-ENG2405 | | Semester-IV-Paper-V |
| | | CO 1 | Acquire knowledge of linguistics as a discipline. |
| | | CO 2 | Acquire with basics of linguistics and the key concepts. |
| | | CO 3 | Apply the words and word formation processes**.** |
| | Opt. Indian Literature in English KBP-UG-A-ENG2406 | | Semester-IV Paper-VI |
| | | CO 1 | Acquire the critical and analytic skills of literary works |
| | | CO 2 | Describe the salient features of Indian English novel and drama. |
| | | CO 3 | Analyze poetry as a form of literature |
| | **History of Modern Europe (1789-1871) KBP-A-UG-HIS-233** | | **Semester-III-Paper-III** |
| | | CO 1 | Elaborate the concept of modern Europe. |
| | | CO 2 | Relate the society and revolution in Europe. |
| | | CO 3 | Assimilate the function of great character in Europe like Npolien Bonapart. |
| | | CO 4 | Analyze the work of Vienna congress. |
| | **History of Indian freedom Movement** | | **Semester-III- Paper-IV** |
| | | CO 1 | Understand how the British Power extended in India. |

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| **History** | **[1818 to 1950 A.D.] KBP-A-UG-HIS-234** | CO 2 | Explain why the India revolted against the British. |
| | | CO 3 | Assimilate the Importance of Nationalism |
| | | CO 4 | Understand the importance of the National Assembly in the Indian Independence movemen |
| | **History of Modern Europe (1789-1871) KBP-A-UG-HIS-245** | | **Semester-IV-Paper-V** |
| | | CO 1 | Understand the French revolution impact on world. |
| | | CO 2 | Assume the value of principles of French revolution. |
| | | CO 3 | Compare the unification of Germany and Italy. |
| | | CO 4 | Understand and compare the great character of Germany and Italy. |
| | **History of Indian freedom Movement [1818 to 1950 A.D.] KBP-A-UG-HIS-246** | | **Semester-V- Paper-VI** |
| | | CO 1 | Understand the Revolutionaries movement function in India |
| | | CO 2 | Understand how the Gandhian theory useful in modern period. |
| | | CO 3 | Reveal how India was divided. |
| | | CO 4 | Assimilate the importance of the Indian independence movement. |
| **Political Science** | Introduction to Political Theory KBP-A-POL - 223 | | **Semester-III- Paper-III** |
| | | CO 1 | Explain meaning of Political Theory |
| | | CO 2 | Analyze elements and functions of State |
| | | CO 3 | Compare of State and Nation |
| | | CO 4 | Define concept of Sovereignty |
| | Modern Indian Political Thoughts KBP-A-POL - 234 | | Semester-III -Paper-IV |
| | | CO 1 | Describe social and political thoughts of Raja Ram Mohan Roy |
| | | CO 2 | Explain the thoughts on social reforms of Mahatma Phule |
| | | CO 3 | Define Four Fold Programme of B.G.Tilak |

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| | | CO 4 | Interpret concept of Satya, Ahimsa and Satyagraha of Mahatma Gandhi |
| | Introduction to Political Theory<br>KBP-A-POL - 245 | | Semester-IV -Paper-V |
| | | CO 1 | explain meaning concept of Political Power |
| | | CO 2 | discuss meaning and Kinds of Authority |
| | | CO 3 | compare Authority and Legitimacy |
| | | CO 4 | define concept of Liberty, Equality, Justice and Democracy |
| | Modern Indian Political Thoughts<br>KBP-A-POL - 246 | | **Semester-IV -Paper-VI** |
| | | CO 1 | analyze Democratic Socialism of Pandit Jawaharlal Nehru<br>discuss concept of Satya, Ahimsa and Satyagraha |
| | | CO 2 | explain Secular Nationalism of Abul Kalam Azad |
| | | CO 3 | discuss Democratic Ideas of Dr. Babasaheb Ambedkar |
| | | CO 4 | interpret Democratic Socialism of Ram Manohar Lohiya |
| **Education** | **Psychology and Education** | | **Sem. -III – Paper-III** |
| | | Co1 | Explain the relation between Psychology and Education |
| | | Co2 | Compare the different methods study of Psychology |
| | | Co3 | Compare the different theories of Intelligence put forward by different psychologists |
| | | Co4 | Apply the various intelligence tests to measure intelligence |
| | | Co5 | Describe the concept of emotional intelligence |
| | | Co6 | Interpret the process of learning |
| | | Co7 | Compare the different theories of learning. |
| | | Co8 | Explain the concept of Self learning, Peer learning and Cooperative Learning. |
| | | Co9 | Find the factors affecting personality and the remedies |

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| | | Co10 | Use the concept of Integrated personality in daily life |
| | **Development of Education in Ancient and medieval India** | | **Sem. -III –Paper-IV** |
| | | Co1 | Compare the aims and objectives of education, teaching methods, discipline and role of teachers in Pre and post vedic Era |
| | | Co2 | Find similarities and differences in the aims of education , teaching methods, discipline of students and role of teachers in Vedic and Buddhist Period |
| | | Co3 | Compares the characteristic features, Curriculum, Teaching methods of Ancient Universities in India |
| | | Co4 | Compare the aims and objectives of education, teaching methods, discipline and role of teachers in Pre, post vedic Era and Buddhist Era |
| | | Co5 | Find similarities and differences in the aims of education , teaching methods, discipline of students and role of teachers in Vedic and Buddhist Period |
| | | Co6 | Compare the aims and objectives of education, teaching methods, discipline and role of teachers in Pre, post vedic Era and Buddhist Era, Islamic Period with present Education system. |
| | **Teaching and Learning** | | **Sem.-IV- Paper-V** |
| | | Co1 | Find the reasons which affect the teaching process |
| | | Co2 | Identify the teaching maxims used in daily teaching og the teachers |
| | | Co3 | Describe the pros and cons of different teaching methods. |
| | | Co4 | Compare the characteristic features of different methods and decides which teaching method is the best method off teaching. |
| | | Co5 | Explain the qualities of good teacher and identifies the good qualities of teachers,. |
| | | Co6 | Explain the characteristic features of adolescent stage |

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| | | Co7 | Differentiate slow and gifted learners |
| | **Education in British Period and Post Independence Period** | | Sem. -IV- Paper-VI |
| | | Co1 | Find the main issues in Oriental–Occidental controversy |
| | | Co2 | Explain the Downward Filtration Theory of Education |
| | | Co3 | Find the reasons for the failure of Downward Filtration Theory of Education |
| Geography | Climatology GEO-2303 | | Semester-III -Paper-III |
| | | **CO 1** | Apply the Knowledge the fundamental concepts of Climatology. |
| | | **CO 2** | Understand Isolation and Temperature of climatic aspects. |
| | | **CO 3** | Summarize the Air Pressure and Winds. |
| | | **CO 4** | Explain the Atmospheric Moisture, Cyclone, Monsoon and its influence on human life. |
| | Geography of India GEO-2304 | | Semester-III -Paper-IV |
| | | **CO 1** | Recognize the idea of physical feature of India. |
| | | **CO 2** | Understand the Growth of population, distribution of population and structure of population in India. |
| | | **CO 3** | Understand distribution and production of mineral and power resources in India. |
| | | **CO 4** | Acquire the Physiographic and Economic regionalization of India |
| | Economic Geography GEO-2405 | | Semester-IV-Paper-V |
| | | **CO 1** | Understand the fundamental concepts of Economic Geography. |
| | | **CO 2** | Explain Primary, Secondary and Tertiary economic activities. |
| | | **CO 3** | Understand the Manufacturing, Special Economic zones and Technology parks |
| | | **CO 4** | Analyze problem and prospect about agriculture, trade and transport. |
| | Environmental Geography GEO-2406 | | Semester-IV- Paper-VI |
| | | **CO 1** | Understand the fundamental concepts of Environmental Geography. |
| | | **CO 2** | Describe relationship between Human and Environment. |
| | | **CO 3** | Explain the concept, structure and functions of ecosystem |

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| | | **CO 4** | Summarize Environmental problems, programs and policies at global, National and Local level. |
| **Economics** | **Money and Banking KBP-A-ECO-233** | | **Semester-III -Paper-III** |
| | | **CO 1** | Identify the Importance of Money in the Economy |
| | | **CO 2** | Analyze the changing the value of Money |
| | | **CO 3** | Analyze the Recent Trends in Commercial Banking in India |
| | | **CO 4** | Identify the Importance of RBI in Financial System of India |
| | **Demographic Studies KBP-A- ECO-234** | | **Semester-III- Paper-IV** |
| | | **CO 1** | Classify the Sources of Demographic Data in India |
| | | **CO 2** | Compare the Birth Rate and Death Rate in India |
| | | **CO 3** | Analyze various Concepts and Theories of Population |
| | | **CO 4** | Examine the Population Policies of India |
| | **Public Finance KBP-A-ECO-245** | | **Semester-IV- Paper-V** |
| | | **CO 1** | Classify the Concept of Public Finance |
| | | **CO 2** | Examine the Causes of Growth and Its Effects of Public Expenditure and Public Debt |
| | | **CO 3** | Identify the Tax Structure so he can do tax planning in his life |
| | | **CO 4** | Analyze Annual Budget of India |
| | **Demography in India KBP-A-ECO-246** | | **Semester-IV- Paper-VI** |
| | | **CO 1** | Analyze the Demographic Characteristics of Indian Economy |
| | | **CO 2** | Understand the Situation of Migration of India |
| | | **CO 3** | Apply the Concept of Small Family in his Life |
| | | CO 4 | Identify the various stools and techniques used for Demographic Study |

| Paper No. | Paper/Course Name Couse Code | COs | Semester-III |
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| | | | *Student will be able to*: |
| **Paper: III** | History of Ancient India. KBP-A-UG-AIHC-233 | **CO 1** | explain the contributions of various kings of ancient India. |
| | | **CO 2** | evaluate the work of ancient Indian kings. |
| | | **CO 3** | classify ancient Indian art and administration. |
| | | **CO 4** | Explain ancient Indian literature from a comparative point of view. |
| **Paper: IV** | History of social Institution in Ancient India. KBP-A-UG- AIHC -234 | **CO 1** | understand the importance of proto History. |
| | | **CO 2** | compare the Gurukul and universities education in Ancient India. |
| | | **CO 3** | analyze the womens rights and duties in ancient India. |
| | | **CO 4** | explain the importance of Purushartha in Vedic priod. |
| **Paper: V** | **Economics History of Ancient India.** KBP-A-UG- AIHC -245 | **CO 1** | classify ancient Indian temple architecture. |
| | | **CO 2** | analyze ancient Indian tourism from a historical perspective. |
| | | **CO 3** | Acquire the knowledge of Archaeology.. |
| | | **CO 4** | evaluate the nature and development of ancient Indian art and architecture. |
| **Paper: VI** | **Culture History of Ancient India.** KBP-A-UG- AIHC -246 | **CO 1** | understand how the art and architecture war a rise in Ancient India. |
| | | **CO 2** | compare the temple structure of south and north India. |
| | | **CO 3** | understand how museums was developed in India. |
| | | **CO 4** | explain the importance of Archaeology Department to the students |

Rayat Shikshan Sanstha's

**KARMAVEER BHAURAO PATIL MAHAVIDYALAYA,PANDHARPUR**

# (Autonomous)

## Course Outcomes (COs)

## BCA-I

| Paper No. | Paper/Course Name Couse Code | COs | Semester-I |
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| | | | *Student will be able to*: |
| | **Fundamentals of Computer-I,II KBP-S-BCA-1102, 1103** | **CO 1** | Why computers are essential components in business, education and society. |
| | | **CO 2** | Compare the fundamentals of computers, generations of computers and operating system. |
| | | **CO 3** | How to memory management in computer system. |
| | | **CO 4** | Where the use of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming. |
| | | **CO 5** | How to give security and safety of data in computer system. |
| | | **CO 6** | Demonstrate the network topologies in computer communication. |
| | **Basics of 'C' Programing-I,II KBP-S-BCA-1104, 1105** | **CO 1** | Define the basic terminology used in computer programming. |
| | | **CO 2** | Analyse a given problem and develop an algorithm to solve the problem. |
| | | **CO 3** | Illustrate the flowchart and design an algorithm for a given problem and to develop C programs using operators. |
| | | **CO 4** | Explain the concept of Control Statements. |
| | | **CO 5** | Define initialization of array, Memory allocation view for all types of array. |
| | | **CO 6** | How to use of functions in program. |
| | **Financial Accounting With Tally-I,II KBP-S-BCA-1106, 1107** | **CO 1** | After successfully qualifying practical examination, students will be awarded certificate to work with well-known accounting software i.e. Tally ERP.9. |
| | | **CO 2** | Student will do by their own create company, enter accounting voucher entries including advance voucher entries, do reconcile bank statement, do accrual adjustments, and also print financial statements, etc. in Tally ERP.9 software . |

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| | | **CO 3** | Students do possess required skill and can also be employed as Tally data entry operator. |
| | **Discrete Mathematics-I,II KBP-S-BCA-1108, 1109** | **CO 1** | How to Simplify and evaluate basic logic statements including compound statements, implications, inverses, converses, and contra positives using truth tables and the properties of logic. |
| | | **CO 2** | Apply the operations of sets and use Venn diagrams to solve applied problems; solve problems using the principle of inclusion-exclusion. |
| | | **CO 3** | Determine the domain and range of a discrete or non-discrete function, graph functions, identify one-to-one functions, perform the composition of functions. |
| | | **CO 4** | Apply the properties of functions to application problems. |
| | | **CO 5** | Find and/or graph the inverse of a function. |
| | | | **Semester- II** |
| | **Advanced Programming in 'C' KBP-S-BCA-1202** | **CO 1** | List the user defined data types including structures and unions to solve problems. |
| | | **CO 2** | IllustrateProgram with pointers and arrays, perform pointer arithmetic, and use the pre-processor. |
| | | **CO 3** | Explain files concept to show input and output of files in C . |
| | | **CO 4** | How to use of Command line arguments. |
| | **Digital Electronics KBP-S-BCA-1203** | **CO 1** | Explain concepts and terminology of digital electronics. |
| | | **CO 2** | Compare Synchronous and asynchronous in data transmission. |
| | | **CO 3** | Demonstrate Digital circuit design. |
| | | **CO 4** | Explain the concept of Computer Organization. |
| | **Web Technology – I,II KBP-S-BCA-1204,1205** | **CO 1** | Explain the basic concept of HTML. |
| | | **CO 2** | Distinguish between HTML and HTML5. |
| | | **CO 3** | Design interactive web pages using HTML and Style sheets. |

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| | | **CO 4** | Create 2D/3DTransformations and Animations in web pages. |
| | **Software Engineering-I,II KBP-S-BCA-1206,1207** | **CO 1** | Show the ability to gather and specify requirements of the software projects. |
| | | **CO 2** | Analyse software requirements with existing tools. |
| | | **CO 3** | Define the System Development life cycle. |
| | | **CO 4** | Apply the Fact finding techniques in project management System. |
| | | **CO 5** | Examine the Configuration and Construction of the System. |
| | **Computer Oriented Statistics-I,II KBP-S-BCA-1208,1209** | **CO 1** | Apply the Population & Sample techniques Data Analysis . |
| | | **CO 2** | Identify formula for computation for ungrouped and grouped data. |
| | | **CO 3** | Make use of addition and multiplication laws of probability. |
| | | **CO 4** | Show the correlation and regressionFor Ungrouped data. |

**B.Sc.-I (Botany)**

| **Paper No.** | **Paper/Course Name Couse Code** | **Cos** | **Semester-I** |
|---|---|---|---|
| | | | *Student will be able to*: |
| I | Biodiversity of Microbes, Algae and Fungi | **CO 1** | To **find** out features, concept and uses of Microbes. |

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| | KBP-S-BOT-1101 | **CO 2** | E**xplain** features, concept and uses of Algae. |
| | | **CO 3** | To **demonstrate** features, concept and uses of Fungi. |
| II | Biodiversity of Archegoniate<br>KBP-S-BOT-1102 | **CO 1** | C**ompare** general characters and reproduction of Bryophytes. |
| | | **CO 2** | I**nterprets** general characters and reproduction of Pteridophytes. |
| | | **CO 3** | To **illustrate** general characters and reproduction of Gymnosperms. |
| | | | **Semester II** |
| III | Plant Ecology<br>KBP-S-BOT-1203 | **CO 1** | To **Analyze** ecological adaptation. |
| | | **CO 2** | Students will **interpret** the ecosystem, its structure and function. |
| | | **CO 3** | To understand the **functions** of ecological succession. |
| | | **CO 4** | **Explain** Phytogeographical regions from India. |
| IV | Taxonomy of Angiosperms | **CO 1** | To **Find** out importance of Plant taxonomy. |

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| | KBP-S-BOT-1204 | **CO 2** | To **classify**Angiospermic plants families. |
| | | **CO 3** | **Show** the morphological and reproductive characters of Angiospermic families |
| | | **CO 4** | To **Identify**Angiospermic plants families. |

**B. Sc – I (Chemistry)**

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-I** |
|---|---|---|---|
| **I** | **Physical Chemistry KBP-S-CHE-1101** | | *Student will be able to* understand: |
| | | **CO 1** | Rate of reaction and rate laws, mechanism and path of chemical reactions, calculation of order of reactions |
| | | **CO 2** | Applications of laws of logarithms, graphical representation, Derivative and integration in chemical calculations. |
| | | **CO 3** | Thermodynamics and entropy change. |
| | | **CO 4** | Various gas laws relating pressure, volume and temperature |
| **II** | **Inorganic Chemistry KBP-S-CHE-1102** | | *Student will be able to* understand: |
| | | **CO 1** | Structure of atom, various atomic properties like ionization potential, atomic size, electron affinity, elctro-negativity etc. in the groups and across the periods. |
| | | **CO 2** | Meaning of ionic and covalent bonds, formation of covalent bonds VBT and MOT, examples |

| Paper No. | Paper/Course Name Couse Code | COs | Semester-II |
|---|---|---|---|
| **III** | **Organic Chemistry KBP-S-CHE-1103** | | *Student will be able to* understand: |
| | | **CO 1** | Basic concepts in organic chemistry related to structure and reactivity. |
| | | **CO 2** | Comparison of acid and base strengths. |
| | | **CO 3** | Inter-conversion of functional groups |
| **IV** | **Analytical Chemistry KBP-S-CHE-1104** | | *Student will be able to* understand: |
| | | **CO 1** | Physical properties of liquids viz. viscosity, surface tension, parachor, dipole moment and refractive index |
| | | **CO 2** | Qualitative and quantitative analysis of elements like C, H, N, S, X |
| | | **CO 3** | Constituents of petroleum and petrochemicals. Synthesis and industrial applications of petrochemicals like ethylene oxide, adipic acid, styrene, 2-phenyl ethanol, paracetamol. |
| | | **CO 4** | Micronutrients, Types of Fertilizer, requirements of fertilizer Fertility and pH Value of soil. Classification of fertilizer, Complex fertilizer, Effect of fertilizer. |

**B.Sc.-I(Electronics)**

| Paper No. | Paper/Course Name | COs | Semester-I |
|---|---|---|---|
| | | | *student will be able to:* |

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| I | **Basic Circuit Theory and Network Analysis** | | |
| | | CO 1 | List Basic Circuit components. |
| | | CO 2 | Tell basic circuit fundamentals. |
| | | CO 3 | Name the different types of AC circuits and their working principles. |
| | | CO 4 | Define different network theorems used for designing of various Electronic circuits. |
| | | CO 5 | Understand two port network theory. |
| II | **Semiconductor Devices** | | *student will be able to:* |
| | | CO 1 | Tell the fundamental concept of semiconductor. |
| | | CO 2 | Explain how the semiconductor devices are working. |
| | | CO 3 | Understand construction and working of BJT, FET. |
| | | CO 4 | List the differences between BJT and FET. |
| | | CO 5 | Label the terminals of different power devices. |
| **Paper No.** | **Paper/Course Name** | **COs** | **Semester-II** |
| III | **Digital Fundamentals** | | *student will be able to:* |
| | | CO 1 | Define different number systems. |
| | | CO 2 | List different logic gates. |
| | | CO 3 | Define Demorghan's theorems. |
| | | CO 4 | Tell the rules and laws of Boolean Algebra. |

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| | | CO 5 | Explain how arithmetic circuits are working. |
| IV | **Digital Electronics** | | *student will be able to:* |
| | | CO 1 | Define different logic families and their specifications. |
| | | CO 2 | List the types of flip flops. |
| | | CO 3 | List the different types of Shift Registers. |
| | | CO 4 | Tell the working principle of Binary Counter. |
| | | CO 5 | Understand basic computer and memory. |

**B.Sc.-I(Physics)**

| Paper No. | Paper/Course Name Couse Code | COs | Semester-I |
|---|---|---|---|
| | | | *Students will be able to*: |
| **Paper-I** | **KBP-S-PHY-1101 : Mechanics** | CO 1 | Define scalar, vector and their products |
| | | CO 2 | Understand derivative of a vector with respective to parameters. |
| | | CO3 | Distinguish ordinary and Partial differential equation. |
| | | CO 4 | Understand and simplify $1^{st}$ and $2^{nd}$ order homogenous differential equation. |
| | | CO 5 | Classify inertial and non-inertial frame of reference. |
| | | CO 6 | Understand Newton's laws of motion and their applications |
| | | CO 7 | Define linear momentum, angular momentum, work and energy. |
| | | CO 8 | Derive work energy theorem and conservation of energy. |
| | | CO 9 | Explain motion of particle and system of particles. |
| | | CO 10 | Describe centre of mass, centre of gravity and motion of rocket. |
| | | CO 11 | Gain the knowledge of angular velocity, torque, inertia and moment of inertia. |

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| | | CO 12 | Calculate the moment of inertia of a given body about axis of rotation. |
| | | CO 13 | Learn the rolling motion of spherical shell and solid cylinder. |
| **Paper – II** | **KBP-S-PHY-1102 : ELECTROSTATICS** | CO 1 | Define gradient, divergence and curl. |
| | | CO 2 | Discuss the significance of gradient, divergence and curl. |
| | | CO3 | Study the line, surface and volume integrals. |
| | | CO 4 | Understand Gauss' divergence, Stoke's and Green's theorems. |
| | | CO 5 | Explain basic concept of electrostatic field, electric flux and electric dipole. |
| | | CO 6 | Gain the knowledge of concept of parallel plate, cylindrical and spherical condenser. |
| | | CO 7 | Understand energy per unit volume in electrostatic field. |
| | | CO 8 | Define dielectric medium, polarization and displacement vector. |
| | | CO 9 | Derive relation between three electric vectors |
| | | | **Semester II** |
| **Paper - III** | **KBP-S-PHY-1203 : GRAVITATION and PROPERTIES OF MATTER** | CO 1 | Understand motion of particle in central force field. |
| | | CO 2 | Explain concept of satellite in circular orbit, geosynchronous orbits. |
| | | CO3 | Compare streamline and turbulent flow. |
| | | CO 4 | Derive Poiseuille's formula and its application to calculate coefficient of viscosity. |
| | | CO 5 | Interpret concept of cantilever and torsional oscillations. |
| | | CO 6 | Utilize concept of torsional pendulum to determine rigidity modulus and moment of inertia |
| | | CO 7 | Determine Y, $\eta$ & $\sigma$ |
| | | CO 8 | Gain the knowledge of wettability. |
| | | CO 9 | Estimate surface tension by Jaeger's method. |
| | | CO 10 | Discuss applications of surface tension. |
| **Paper - IV** | **KBP-S-PHY-1204 : ELECTRICITY & MAGNETISM** | CO 1 | Apply the complex numbers in solving AC series circuit. |
| | | CO 2 | Define complex impedance, reactance, admittance and susceptance. |
| | | CO3 | Justify the concept of Wein's bridge. |
| | | CO 4 | Make use of Biot-Sawart Law in straight conductor, circular coil & solenoid. |
| | | CO 5 | Elaborate concept of divergence & curl of magnetic field. |

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| | | CO 6 | Study diamagnetic, paramagnetic and ferro-magnetic materials. |
| | | CO 7 | Understand concept of self and mutual inductance. |
| | | CO 8 | Determine energy stored in magnetic field. |
| | | CO 9 | Explain the concept of conservation of charge. |
| | | CO 10 | Interpret divergence and curl of electric & magnetic fields in Maxwell's equations. |
| | | CO 11 | Examine the EM wave propagation through vacuum & isotropic dielectric medium. |
| **P-1** | **Physics Practical Code: P-1 (Annually)** | CO 1 | Handle electrical instruments |
| | | CO 2 | Improve measuring skills in electrical instruments. |
| | | CO3 | Verify theoretical concepts by performing experiments. |
| | | CO 4 | Aware of minimizing errors. |

**B.Sc.I(Statistics)**

| **Paper No.** | **Paper/Course Name Couse Code** | **Cos** | **Semester-I** |
|---|---|---|---|
| **Paper I** | **Descriptive Statistics – I KBP-S-STA-1101** | | *Student will be able to*: |
| | | **CO 1** | **Define-** Mathematical Averages (AM, GM, HM), Positional Averages (Median, Mode Partition values), Absolute (Range, Q.D., M.D., S.D.) and Relative measures of dispersion, Moments, Skewness and Kurtosis, Characteristics of Attributes. |
| | | **CO 2** | **Explain-** Constructions of Diagrams and Graphs, Mathematical Averages and Positional Averages, Absolute and Relative measures of dispersion, Moments Skewness and Kurtosis, Characteristics of Attributes. |
| | | **CO 3** | **Write**- Relation between AM ,GM, HM, Derivation of Median and Mode,<br>Properties of Measures of central tendency and dispersion, first four raw and central moments, measures of Skewness and Kurtosis, concept of consistency in attributes, Yule's coefficient of association, |

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| | | | coefficient of colligation and relation between them. |
| | | | **Semester I** |
| **Paper II** | **Probability and Probability Distribution – I KBP-S-STA-1102** | | *Student will be able to*: |
| | | **CO 1** | **Define-** Sample space (Finite and countable infinite), Power set, Axiomatic definition of probability, Probability Mass function (p.m.f), Cumulative distribution function (c.d.f.). |
| | | **CO 2** | **Explain-** Random experiment, events and types of events, Conditional Probability and Independence of events. |
| | | **CO 3** | **Write-** Examples on sample space, simple examples on probability based on permutation and combination, Theorems on probability, Properties of c.d.f. |
| | | | **Semester II** |
| **Paper III** | **Descriptive Statistics–II KBP-S-STA-1203** | | *Student will be able to*: |
| | | **CO 1** | **Define**- Types of correlation, fitting of line of Regression, Coefficient of Determination, Residual, Weighted and Unweighted index numbers. |
| | | **CO 2** | **Explain**- Bivariate data, Correlation, Regression, Multiple and Partial correlation, Multiple Regression, Index Number, Types of Index Number. |
| | | **CO 3** | **Write-** Interpretation of r, if r = 1, r = -1, r = 0, Properties of correlation coefficient, Derivation of the formula for Spearman's rank correlation coefficient, Fitting of regression plan by method of least square, Properties of multiple and partial correlation coefficient, Price , Quantity and Value index number. |
| | | | **Semester II** |
| **Paper III** | **Probability and Probability Distribution –II** | | *Student will be able to*: |

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| | **KBP-S-STA-1204** | | |
| | | **CO 1** | **Define-** Random Variable**,** Expectation of random variable , Mean, Variance, Raw and central moments based on expectation of random variable, p.g.f., Bernoulli , Binomial, Discrete Uniform, Hypergeometric distributions, Poisson distribution, Geometric and Negative Binomial Distribution, Bivariate discrete random variable. |
| | | **CO 2** | **Write-** Properties of p.g.f., Probability mass function, Mean, Variance, moments &c.d.f. for standard discrete probability distributions. Recurrence relation, concept of marginal and conditional probability distributions, Theorems on expectation, conditional mean and variance. |
| | | **CO 3** | **Explain-** Results on expectation of random variable, Mean and variance by using p.g.f. |

**B.Sc. I(<u>Zoology)</u>**

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester** |
|---|---|---|---|
| | | | *Leaner will be able to..* |
| | **B.Sc.I** | | **Semester-I** |
| **01** | **Animal Diversity-I** | **CO 1** | Identify, classify and describe salient features of different groups of non chordata. |
| | | | Compare and write the salient features ofnon chordates by observing them in field and laboratory |
| | | | Demonstrate and Explain the peculiar features of different non chordate groups |
| | | | Compare the general adaptions with parasitic adaptions. |
| 02 | **Physiology** | **CO 2** | Explain the structure of kidney and physiology of excretion |
| | | | Describe structure of muscles and mechanism of muscle contraction. |

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| | | | Explain the Digestive system &elaborate process of digestion & absorption in animals . |
| | | | Describe structure of heart and process of circulation. |
| | | | |
| | **B.Sc.I** | | **Semester II** |
| **03** | **Cell Biology & Evolutionary Biology** | **CO 3** | Acquire the basic knowledge of origin of life |
| | | | Identify and describe diseases related to chromosomal abnormalities. |
| | | | Understand and describe the concept of evolution |
| | | | Acquire the basic knowledge on structure of cell & its diversity. |
| 04 | **Genetics** | **CO 4** | Understand the concepts of basic hematology and identify the blood groups by analyzing the samples |
| | | | Understand and describe the patterns of chromosomal mutation. |
| | | | Explain reasons of genetic variations. |
| | | | Write chromosomal theories of sex determination. |

**Computer Science**

| Paper No. | Paper/Course Name Couse Code | COs | Semester-I |
|---|---|---|---|
| **I** | **Fundamentals of computers KBP-S-COM-1101** | | *Student will be able to* understand: |
| | | **CO 1** | Evolution and Generation of computer, Elements of Computer Processing system, Categories of Software. |
| | | **CO 2** | Operating system concept, Types of Operating system, Mobile Operating system, Green IT. |

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| | | **CO 3** | Utilize the knowledge of Microsoft Word, MS-Excel, MS-PowerPoint. |
| **II** | **Programming Using C-I KBP-S-COM-1102** | | *Student will be able to* understand: |
| | | **CO 1** | Programming languages, Compiler, Assembler, Documentation, Algorithm, Flowcharts. |
| | | **CO 2** | Features of C, Structure of C programming, C-Tokens, Data Types, Control and Conditional Statements. |
| | | **CO 3** | Creating a simple Program by using Arrays and String |

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-II** |
|---|---|---|---|

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|---|---|---|---|
| **III** | **Introduction to Web Designing KBP-S-COM-1203** | | *Student will be able to* understand: |
| | | **CO 1** | Networking, Network Topology, LAN, MAN, WAN, Introduction HTML, structure of HTML, Tags of HTML, HTML5. |
| | | **CO 2** | CSS, Types, Properties, Values.CSS, CSS interact with Java Script |
| | | **CO 3** | Java Script, Introduction, Variable and data types, Operators, Built in functions, validation in java Script. |
| **IV** | **Programming using C-II KBP-S-COM-1204** | | *Student will be able to* understand: |
| | | **CO 1** | Definition of Function, function prototypes, user defined function, recursion Definition of pointer, declaration, pointer and function, pointer and array, pointer of pointer call by value and call by reference. |
| | | **CO 2** | Definition and declaration of structures and union, comparing of structure, nested structure, difference between structure, union and array |
| | | **CO 3** | File Handling definition, opening and closing of file, Error handling, macro and preprocessing. |

## Mathematics

| Paper No. | Paper/Course Name Course Code | COs | Semester-I |
|---|---|---|---|
| **I** | **Differential Calculus-I KBP-S-MAT-111** | | *Student will be able to*: |
| | | **CO 1** | compute limits, continuity and derivatives of real valued functions |
| | | **CO 2** | classify the dis-continuity of function at particular point in its domain. |

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| | | **CO 3** | study the behavior of function whether it is bounded or unbounded. |
| | | **CO 4** | use formulae to take derivatives of polynomial, trigonometric, exponential, and logarithmic functions. |
| | | **CO 5** | find a point in the domain of function at which tangent drawn to the curve is parallel to the X-axis. |
| | | **CO 6** | Leibnitz theorem to find nth derivative of the product of two functions. |

| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-I** |
|---|---|---|---|
| **II** | **Differential Equations-I KBP-S-MAT-112** | | *Student will be able to*: |
| | | **CO 1** | solve differential equations of first order and first degree, first order and second degree using different methods. |
| | | **CO 2** | obtain orthogonal trajectories for given family of curves. |
| | | **CO 3** | reduce the given differential equation to Clairaut's equation and find its solution. |
| | | **CO 4** | use general methods and short methods to find Particular Integral |
| | | **CO 5** | classify roots of auxiliary equation to find solution of corresponding differential equation |

**Course Outcomes (COs)**

| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-II** |
|---|---|---|---|

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| **III** | **Differential Calculus-II KBP-S-MAT-121** | | *Student will be able to*: |
| | | **CO 1** | develop geometric approach to prove Rolle's Mean Value Theorem and Lagrange's Mean Value Theorem |
| | | **CO 2** | approximate k-times differentiable function at point by using Taylor's polynomial |
| | | **CO 3** | find Maclaurin's series for the given trigonometric, logarithmic, exponential, polynomial etc. functions. |
| | | **CO 4** | solve the intermediate form by using Hospital's rule. |
| | | **CO 5** | develop logic behind the limit, continuity and partial differentiation of functions of two variables. |
| | | **CO 6** | apply Euler's theorem to find the partial differential equation of given homogeneous function in few steps. |
| | | **CO 7** | discuss the behavior of function of two variables. |

| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-II** |
|---|---|---|---|
| **IV** | **Differential Equations-II KBP-S-MAT-122** | | *Student will be able to*: |
| | | **CO 1** | solve the homogeneous differential equation by using different methods |
| | | **CO 2** | transform the equation by changing the dependent and independent variables |
| | | **CO 3** | find the general solution of differential equation using method of variation of parameters |
| | | **CO 4** | solve simultaneous linear differential equation of first kind and find its applications in mathematical physics. |
| | | **CO 5** | discuss geometrical relation between Total Differential Equation and Simultaneous Linear Differential Equation |
| | | **CO 6** | develop the geometric approach to study total differential Equation |

| Paper No. | Paper/Course Name<br>Couse Code | COs | Semester-I and II |
|---|---|---|---|
| | | | *Student will be able to*: |
| **I** | **Business communication I** | **CO 1** | To distinguish among various levels of organizational communication and communication barriers while developing an understanding of Communication as a process in an organizatio |
| | | **CO 2** | To demonstrate his verbal and non-verbal communication ability through presentations. |
| | | **CO 3** | To stimulate their Critical thinking by designing and developing clean and lucid writing skills. |
| **II** | **Fundamental of food science** | **CO 1** | Understand the principles , physical andchemical components of food |
| | | **CO 2** | Examine the techniques available for processing |
| | | **CO 3** | Recognize and describe various food groups interms of selection, composition and grading |
| | | **CO 4** | Discuss the processing of cereals and pulses. |
| **III** | **Food preservation** | **CO 1** | Discuss various processing and preservation techniques |
| | | **CO 2** | Identify novel technologies in the processing |
| | | **CO 3** | Compare various food processing technology |

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| **IV** | **Agro processing** | **CO 1** | Explain composition and structure of different cereals and pulses |
| | | **CO 2** | Discuss the working and principle of rice mill in detail and their parts |
| | | **CO 3** | Different methods of oil extractions |
| | | **CO 4** | Production of major spices in India & their importance in Indian diet |
| **V** | **Business communication** | **CO 1** | To put in use the basic mechanics of Grammar |
| | | **CO 2** | To provide an overview of Prerequisites to Business Communication |
| | | **CO 3** | To underline the nuances of Business communication. |
| **VI** | **Bakery and confectionary** | **CO 1** | Identify and select ingredients for use in a variety of baked products |
| | | **CO 2** | Prepare a variety of baked products using creaming, sponge, muffin, basic custards methods, cake |
| | | **CO 3** | Describe and use the equipment typical to the baking process |
| **VII** | **Food chemistry** | **CO 1** | Explain the Structure and properties ofcarbohydrates |
| | | **CO 2** | Demonstrate the chemistry various lipids |
| | | **CO 3** | Discuss the classification and properties of aminoacid and proteins |

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| **VIII** | **Fruit and vegetable processing** | **CO 1** | To acquire a basic knowledge of in the field of fruit and vegetable processing |
| | | **CO 2** | To acquire a fundamental background of the methods of fruit and vegetable processing |
| | | **CO 3** | To acquire a basic understanding of agriculture sector and processing of fruits and vegetables is of vital importance |

**B.Sc.-E.C.S.-I**

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-I** |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-1102,1103** | **Fundamentals of Programming using C++ – I,II** | **CO 1** | Demonstrate a thorough understanding of the object-oriented programming concepts of encapsulation, polymorphism, inheritance and information hiding. |
| | | **CO 2** | Improve the code using reusability with extensible Class types, User-defined operators and function Overloading. |
| | | **CO 3** | Identify the use of virtual functions in the implementation of polymorphism |
| | | **CO 4** | Discover and implement the features including templates, exception and file handling for providing programmed solutions to complex problems. |
| | | **CO 5** | Develop real - time applications in C++. |
| **KBP-S-ECS-1104,1105** | **Digital Electronics – I,II** | **CO 1** | Understand different number systems and codes |
| | | **CO 2** | Acquire skills in sequential circuits and counters. |
| | | **CO 3** | Study the combinational logic, Encoders,Decoders. |
| | | **CO 4** | To understand about positive, negative logic, logic gate, applications of logic gates, Booleanalgebra. |
| | | **CO 5** | Helps to student design and analysis the Digital circuits. |
| | | **CO 6** | Study features, pin diagram and architecture of 8085 |
| | | **CO 7** | Understanding the instruction set of 8085 and programming. |
| **KBP-S-ECS-** | | **CO 1** | Identify computer hardware and peripheral devices |
| | | **CO 2** | Be familiar with software applications |

| | | | |
|---|---|---|---|
| **1106,1107** | **Fundamental of Computer system-I,II** | **CO 3** | Understand file management |
| | | **CO 4** | Accomplish creating basic documents, worksheets, presentations with their properties. |
| | | **CO 5** | Experience working with email and recognize email netiquette |
| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-I** |
| | | | *Student will be able to*: |
| **KBP-S-ECS-1108,1109** | **Numerical Methods – I,II** | **CO 1** | Understand the algebraic equations and solve this usingbisection method, False Position Method and Newton'smethods. |
| | | **CO 2** | Find an exact solution of algebraic equations usingGauss Elimination and Gauss Jordan methods. |
| | | **CO 3** | Understand the basic concepts of numerical integration and solve the relevant problems using Simpson and Trapezoidal rules. |
| | | **CO 4** | Understand how to solve ordinary differential equations using numerical methods such as Rungekutta's and Euler's methods. |
| | | **CO 5** | Analyze and evaluate the accuracy of common numerical methods. |
| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-II** |
| | | | *Student will be able to*: |
| **KBP-S-ECS-1211,1212** | **Programming Using Java - I,II** | **CO 1** | Understand basic concepts of Object OrientedProgramming and Java Programming Constructs like constants, variables, operators and control statements. |
| | | **CO 2** | Understand the concepts of classes, objects, method overloading, inheritance, arrays , strings and vectors. |
| | | **CO 3** | Understand the need for interfaces and how to achieve multiple inheritance in Java and the concepts ofmulti threading by using thread class and implementing Runnable interface. |
| | | **CO 4** | Understand the concepts of errors and exceptions,keywords that are used to manage Exceptions and various stream classes like byte streams and character stream classes. |
| | | **CO 5** | Understand the concept of applets by how to create and run applets. |
| **Paper No.** | **Paper/Course Name** | **COs** | **Semester-II** |

| | Couse Code | | |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-1213,1214** | **Discrete Structures – I,II** | **CO 1** | Identify sets, different properties of sets, set operations and set identities. |
| | | **CO 2** | Explain the different methods for representing the relationship between sets. |
| | | **CO 3** | The basic concepts involving functions needed in discrete mathematics. |
| | | **CO 4** | Define and interpret the concepts of divisibility, congruence, greatest common divisor, prime and prime factorization. |
| | | **CO 5** | define the basic concepts of graphs, directed graphs, and weighted graphs. |
| | | **CO 6** | Defines a graph, identifying edges and vertices. |
| | | **CO 7** | Finds the degree of a vertex.,Express and prove handshaking lemma. |
| **KBP-S-ECS-1215,1216** | **Introduction to Web Designing – I,II** | **CO 1** | Identify the principles of coherent web coding and good visual design |
| | | **CO 2** | Analyze examples of coding practice and web site design |
| | | **CO 3** | Demonstrate the incorporation of of XHTML and CSS in an HTML page. |
| | | **CO 4** | Design web pages using HTML tags and features |
| | | **CO 5** | Utilize their design skills to create a professional website. |
| | | **CO 6** | Build dynamic web pages using JavaScript (Client side programming). |
| | | **CO 7** | Analyze a web page and identify its elements and attributes |
| **KBP-S-ECS-1215,1216** | **Computer System Architecture – I,II** | **CO 1** | Analyze some of the design issues in terms of speed, technology, cost, performance. |
| | | **CO 2** | Learn the concepts of parallel processing, pipelining and interprocessor communication |
| | | **CO 3** | Understand the architecture and functionality of central processing unit |
| | | **CO 4** | Exemplify in a better way the I/O and memory organization |
| | | **CO 5** | Define different number systems, binary addition and subtraction, 2's complement representation and operations with this representation. |
| | | **CO 6** | Identify basic components and design of the CPU: the ALU and control unit. |
| | | **CO 7** | Compare various types of IO mapping techniques |
| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-II** |
| | | | *Student will be able to*: |

| | | | |
|---|---|---|---|
| **KBP-S-ECS-LAB-P-I** | **Fundamentals of Programming using C++ – I,II& Fundamental of Computer system-I,II** | **CO 1** | Understand how to write and use simple programs using functions and inline functions |
| | | **CO 2** | Use classes and objects for implementing banking applications |
| | | **CO 3** | Develop programs using the concept of overloading,friend functions, arrays of objects and constructors |
| | | **CO 4** | Apply the concept of unary and binary operatorOverloading |
| | | **CO 5** | Familiar with the concept related pointers, inheritanceand file. |
| | | **CO 6** | Familiarizing with Open Office (Word processing, Spreadsheets and Presentation) |
| | | **CO 7** | acquire knowledge on editor, spread sheet and presentation software.<br>perform documentation and accounting operations. |
| **KBP-S-ECS-LAB-P-II** | **Programming Using Java - I,II** | **CO 1** | Write Java application programs using OOP principles and proper program structuring. |
| | | **CO 2** | Develop Java program using packages, inheritance and interface. |
| | | **CO 3** | Create Multithreaded programs. |
| | | **CO 4** | Write Java programs to implement error handling techniques using exception handling and develop programs using class and inputs from keyboard. |
| | | **CO 5** | Develop graphical User Interface using AWT. |
| | | **CO 6** | Demonstrate event handling mechanism. |
| | | **CO 7** | Develop swing application |
| **KBP-S-ECS-LAB-P-III** | **Introduction to Web Designing – I ,II** | **CO 1** | Design the webpages using hyper links |
| | | **CO 2** | Format the document in the web pages |
| | | **CO 3** | Use Frames and Framesets in their web page design |
| | | **CO 4** | Manipulate tables with rowspan and columspan |
| | | **CO 5** | Design the colorful web pages according to theirCreativity |
| | | **CO 6** | Use the HTML Document Object Model (DOM) to manipulate and organize a web page. |
| | | **CO 7** | Create a functioning web store with variable products. |
| **Paper No.** | **Paper/Course Name<br>Couse Code** | **COs** | **Semester-II** |
| | | | *Student will be able to*: |
| **KBP-S-ECS-** | **Numerical Method - I,II&** | **CO 1** | Understand the algebraic equations and solve this usingbisection method, False Position Method and Newton'smethods. |

| | | | |
|---|---|---|---|
| **LAB-P-IV** | **Discrete Structures - I,II** | **CO 2** | Find an exact solution of algebraic equations usingGauss Elimination and Gauss Jordan methods. |
| | | **CO 3** | Understand the basic concepts of numerical integrationand solve the relevant problems using Simpson and Trapezoidal rules |
| | | **CO 4** | Understand how to solve ordinary differentialequations using numerical methods such as Rungekutta's and Euler's methods. |
| | | **CO 5** | Analyze and evaluate the accuracy of common numerical methods. |
| | | **CO 6** | Understand and explain the basic concepts of graph theory. |
| | | **CO 7** | Evaluate some real time problems using concepts of graph theory. |
| **KBP-S-ECS-LAB-P-V** | **Digital Electronics - I,II& Computer System Architecture – I,II** | **CO 1** | Distinguish between analog and digital systems. |
| | | **CO 2** | Identify the various digital ICs and understand their operation. |
| | | **CO 3** | Apply Boolean laws to simplify the digital circuits. |
| | | **CO 4** | Design simple logic circuits. |
| | | **CO 5** | Explain addressing modes, instruction formats and program control statements. |
| | | **CO 6** | Describe fundamentals concepts of pipeline and vector processing. |

Rayat Shikshan Sanstha's

**KARMAVEER BHAURAO PATIL MAHAVIDYALAYA, PANDHARPUR**

## (Autonomous)

**Department of B.Sc(ECS)**

**B.Sc(ECS) -I**

**Course Outcomes (COs)**

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-I** |
|---|---|---|---|

| | | | |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-1102,1103** | **Fundamentals of Programming using C++ – I,II** | **CO 1** | Demonstrate a thorough understanding of the object-oriented programming concepts of encapsulation, polymorphism, inheritance and information hiding. |
| | | **CO 2** | Improve the code using reusability with extensible Class types, User-defined operators and function Overloading. |
| | | **CO 3** | Identify the use of virtual functions in the implementation of polymorphism |
| | | **CO 4** | Discover and implement the features including templates, exception and file handling for providing programmed solutions to complex problems. |
| | | **CO 5** | Develop real - time applications in C++. |
| **KBP-S-ECS-1104,1105** | **Digital Electronics – I,II** | **CO 1** | Understand different number systems and codes |
| | | **CO 2** | Acquire skills in sequential circuits and counters. |
| | | **CO 3** | Study the combinational logic, Encoders,Decoders. |
| | | **CO 4** | To understand about positive, negative logic, logic gate, applications of logic gates, Boolean algebra. |
| | | **CO 5** | Helps to student design and analysis the Digital circuits. |
| | | **CO 6** | Study features, pin diagram and architecture of 8085 |
| | | **CO 7** | Understanding the instruction set of 8085 and programming. |
| **KBP-S-ECS-1106,1107** | **Fundamental of Computer system-I,II** | **CO 1** | Identify computer hardware and peripheral devices |
| | | **CO 2** | Be familiar with software applications |
| | | **CO 3** | Understand file management |
| | | **CO 4** | Accomplish creating basic documents, worksheets, presentations with their properties. |
| | | **CO 5** | Experience working with email and recognize email netiquette |

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-I** |
|---|---|---|---|
| | | | *Student will be able to*: |

| | | | |
|---|---|---|---|
| **KBP-S-ECS-1108,1109** | **Numerical Methods – I,II** | **CO 1** | Understand the algebraic equations and solve this using bisection method, False Position Method and Newton's methods. |
| | | **CO 2** | Find an exact solution of algebraic equations using Gauss Elimination and Gauss Jordan methods. |
| | | **CO 3** | Understand the basic concepts of numerical integration and solve the relevant problems using Simpson and Trapezoidal rules. |
| | | **CO 4** | Understand how to solve ordinary differential equations using numerical methods such as Rungekutta's and Euler's methods. |
| | | **CO 5** | Analyze and evaluate the accuracy of common numerical methods. |

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-II** |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-1211,1212** | **Programming Using Java - I,II** | **CO 1** | Understand basic concepts of Object Oriented Programming and Java Programming Constructs like constants, variables, operators and control statements. |
| | | **CO 2** | Understand the concepts of classes, objects, method overloading, inheritance, arrays , strings and vectors. |
| | | **CO 3** | Understand the need for interfaces and how to achieve multiple inheritance in Java and the concepts of multi threading by using thread class and implementing Runnable interface. |
| | | **CO 4** | Understand the concepts of errors and exceptions,keywords that are used to manage Exceptions and various stream classes like byte streams and character stream classes. |
| | | **CO 5** | Understand the concept of applets by how to create and run applets. |

| Paper No. | Paper/Course Name Couse Code | COs | Semester-II |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-1213,1214** | **Discrete Structures – I,II** | **CO 1** | Identify sets, different properties of sets, set operations and set identities. |
| | | **CO 2** | Explain the different methods for representing the relationship between sets. |
| | | **CO 3** | The basic concepts involving functions needed in discrete mathematics. |
| | | **CO 4** | Define and interpret the concepts of divisibility, congruence, greatest common divisor, prime and prime factorization. |
| | | **CO 5** | define the basic concepts of graphs, directed graphs, and weighted graphs. |
| | | **CO 6** | Defines a graph, identifying edges and vertices. |
| | | **CO 7** | Finds the degree of a vertex.,Express and prove handshaking lemma. |
| **KBP-S-ECS-1215,1216** | **Introduction to Web Designing – I,II** | **CO 1** | Identify the principles of coherent web coding and good visual design |
| | | **CO 2** | Analyze examples of coding practice and web site design |
| | | **CO 3** | Demonstrate the incorporation of of XHTML and CSS in an HTML page. |
| | | **CO 4** | Design web pages using HTML tags and features |
| | | **CO 5** | Utilize their design skills to create a professional website. |
| | | **CO 6** | Build dynamic web pages using JavaScript (Client side programming). |
| | | **CO 7** | Analyze a web page and identify its elements and attributes |
| **KBP-S-ECS-1215,1216** | **Computer System** | **CO 1** | Analyze some of the design issues in terms of speed, technology, cost, performance. |
| | | **CO 2** | Learn the concepts of parallel processing, pipelining and interprocessor communication |
| | | **CO 3** | Understand the architecture and functionality of central processing unit |
| | | **CO 4** | Exemplify in a better way the I/O and memory organization |

| | | | |
|---|---|---|---|
| | **Architecture – I,II** | **CO 5** | Define different number systems, binary addition and subtraction, 2's complement representation and operations with this representation. |
| | | **CO 6** | Identify basic components and design of the CPU: the ALU and control unit. |
| | | **CO 7** | Compare various types of IO mapping techniques |

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-II** |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-LAB-P-I** | **Fundamentals of Programming using C++ – I,II & Fundamental of Computer system-I,II** | **CO 1** | Understand how to write and use simple programs using functions and inline functions |
| | | **CO 2** | Use classes and objects for implementing banking applications |
| | | **CO 3** | Develop programs using the concept of overloading,friend functions, arrays of objects and constructors |
| | | **CO 4** | Apply the concept of unary and binary operator Overloading |
| | | **CO 5** | Familiar with the concept related pointers, inheritance and file. |
| | | **CO 6** | Familiarizing with Open Office (Word processing, Spreadsheets and Presentation) |
| | | **CO 7** | acquire knowledge on editor, spread sheet and presentation software.<br>perform documentation and accounting operations. |

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|---|---|---|---|
| **KBP-S-ECS-LAB-P-II** | **Programming Using Java - I,II** | **CO 1** | Write Java application programs using OOP principles and proper program structuring. |
| | | **CO 2** | Develop Java program using packages, inheritance and interface. |
| | | **CO 3** | Create Multithreaded programs. |
| | | **CO 4** | Write Java programs to implement error handling techniques using exception handling and develop programs using class and inputs from keyboard. |
| | | **CO 5** | Develop graphical User Interface using AWT. |
| | | **CO 6** | Demonstrate event handling mechanism. |
| | | **CO 7** | Develop swing application |
| **KBP-S-ECS-LAB-P-III** | **Introduction to Web Designing – I ,II** | **CO 1** | Design the webpages using hyper links |
| | | **CO 2** | Format the document in the web pages |
| | | **CO 3** | Use Frames and Framesets in their web page design |
| | | **CO 4** | Manipulate tables with rowspan and columspan |
| | | **CO 5** | Design the colorful web pages according to their Creativity |
| | | **CO 6** | Use the HTML Document Object Model (DOM) to manipulate and organize a web page. |
| | | **CO 7** | Create a functioning web store with variable products. |

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-II** |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-** | **Numerical Method - I,II &** | **CO 1** | Understand the algebraic equations and solve this using bisection method, False Position Method and Newton’s methods. |

| | | | |
|---|---|---|---|
| **LAB-P-IV** | **Discrete Structures - I,II** | **CO 2** | Find an exact solution of algebraic equations using Gauss Elimination and Gauss Jordan methods. |
| | | **CO 3** | Understand the basic concepts of numerical integration and solve the relevant problems using Simpson and Trapezoidal rules |
| | | **CO 4** | Understand how to solve ordinary differential equations using numerical methods such as Rungekutta's and Euler's methods. |
| | | **CO 5** | Analyze and evaluate the accuracy of common numerical methods. |
| | | **CO 6** | Understand and explain the basic concepts of graph theory. |
| | | **CO 7** | Evaluate some real time problems using concepts of graph theory. |
| **KBP-S-ECS-LAB-P-V** | **Digital Electronics - I,II & Computer System Architecture – I,II** | **CO 1** | Distinguish between analog and digital systems. |
| | | **CO 2** | Identify the various digital ICs and understand their operation. |
| | | **CO 3** | Apply Boolean laws to simplify the digital circuits. |
| | | **CO 4** | Design simple logic circuits. |
| | | **CO 5** | Explain addressing modes, instruction formats and program control statements. |
| | | **CO 6** | Describe fundamentals concepts of pipeline and vector processing. |

**Rayat Shikshan Sasnstha's**
**Karmaveer Bhaurao Patil Mahavidyalaya, Pandharpur (Autonomous)**
**P.G. Course Outcomes 2020-2021**

Mar.

| पेपर क्रं . | अभ्यासपत्रिकेचे नाव | साध्यपूर्ती )Out Comes) |
|---|---|---|
| **HCT (Hard Core) Compulsory Paper** | | |
| HCT<br>क्र१ . | साहित्यविचार | १साहित्य. विचार, साहित्यशास्त्र संकल्पना स्पष्ट होईल.<br>२ साहित्य व साहित्यशास्त्र यांच्या संबंधांचे आकलन व उपयोजन क्षमता विकसित.<br>होईल.<br>३.भारतीय व पाश्चात्त्य निर्मितीच्या सिद्धांताचे आकलन होईल.<br>४. साहित्य निर्मिती व आस्वाद यांच्या संदर्भातील विविध वाद व त्यांचे उपयोजन<br>यांची क्षमता विकसित होईल. |
| HCT<br>क्र२ . | मराठी भाषा संवाद व :<br>१भाग – उपयोजन | १.भाषिक संवादाचे महत्त्व समजून घेतील .<br>२.संवादप्रक्रियेतील विविध घटकांचा परिचय करून घेतील .<br>३संवाद मा .ध्यमांच्या स्वरूपाचे आकलन होईल .<br>४.सांस्कृतिक योगदान समजून घेतील संवाद माध्यमांचे सामाजिक व . |
| HCT<br>क्र३ . | आधुनिक मराठी<br>वाङमयाचा इतिहास )–इ .<br>(१९२०ते १८०० .स | १ मराठी वाङमय इतिहासाची संकल्पना आणि आधुनिक मराठी वाङमयाचा.<br>इतिहासाची परंपरा अवगत होईल .<br>२वाङ.मयेतिहासाची विविध साहित्यप्रकारातील ठळक प्रवृती ग्रंथकार साहित्यकृती<br>परिचय करून घेतील.<br>३ .या कालखंडातील वाङमयीन स्थित्यंतरे आणि प्रेरणा यांचे आकलन होईल. |

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| **DSE)Discipline Specific Elective-A** (Any One) | | |
| SCT क्र . १.४ | एका लेखकाचा अभ्यास संत तुकाराम (मध्ययुगीन) | १मध्ययुगीन साहित्य., समाज आणि संस्कृतीचा अभ्यास होईल .<br>२ .लेखक अभ्यास पध्दती समजून घेतली जाईल.<br>३ .संत तुकाराम यांच्या अभंगांचा सखोल अभ्यास होईल.<br>४ संत तुकाराम यांच्या अभंगांच्या आधारे तत्कालीन समाजजीवन समजून घेता. येईल .<br>५ .यांच्या अभंगातील विचारवैभव लक्षात येईल संत तुकाराम.<br>६ .संत तुकाराम यांच्या अभंगांचे वाङ्मयीन मूल्यामापन करता येईल. |
| SCT क्र . २.४ | लोकसाहित्य | १‘ .लोक .या दोन संज्ञा स्पष्ट होतील ’साहित्य‘ आणि ’<br>२ लोकसाहित्याच्या विविध व्याख्यांमधून .लोकसाहित्याचे स्वरूप समजेल.<br>३ .लोकसाहित्याची उत्पत्ती आणि व्याप्ती स्पष्ट करता येईल .<br>४ .लोकसाहित्याचा अभ्यास विविध अंगांनी करणे शक्य होईल . |
| **Soft Core B (Any one) Optional** | | |
| SCT क्र . १.५ | मराठी विज्ञान साहित्य | १ .मराठी विज्ञान साहित्याचे स्वरूप समजेल.<br>२व.िज्ञानाचा मानवी जीवनावरील परिणाम अभ्यासता येईल .<br>३ .वैज्ञानिक दृष्टिकोन रूजविल्या जाईल.<br>४ .मराठी विज्ञान साहित्याच्या कक्षा लक्षात येतील.<br>५ .मराठी विज्ञान कथांचा अभ्यास होईल. |
| SCT क्र . २.५ | बालसाहित्य | १.मराठी बालसाहित्याचे स्वरूप समजेल.<br>२ मराठी.बालसाहित्याचे प्रयोजने कोणती आहेत ती समजतील.<br>३.मराठी बालसाहित्याची वौशिष्टये समजून घेतील. |

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| | | ४. मराठी बालसाहित्याचे वर्गीकरण करतील.<br>५.मराठी बालसाहित्याचे आकलन होईल. |
| **पेपर क्रं .** | **अभ्यासपत्रिकेचे नाव** | **साध्यपूर्ती )Out Comes)** |
| **HCT (Hard Core ) Compulsory Paper** | | |
| HCT<br>क्र१ . | साहित्य समीक्षा | १.साहित्य समीक्षा संकल्पना स्पष्ट होईल.<br>२.साहित्य व समीक्षा यांच्या संबंधांचे आकलन व उपयोजन क्षमता विकसित होईल.<br>३.समीक्षेच्या विविध पद्धतीचे आकलन होईल. |
| HCT<br>क्र२ . | मराठी भाषा संवाद व :<br>भाग – उपयोजन २ | १ .भाषिक संवादाचे महत्त्व समजून घेतील.<br>२.संवादप्रक्रियेतील विविध घटकांचा परिचय होईल.<br>३ .स्वरूपाचे आकलन होईल-संवाद माध्यमांच्या रूप. |
| HCT<br>क्र३ . | आधुनिक मराठी<br>वाङमयाचा इतिहास )–इ .<br>(१९६०ते १९२० .स | १ सांस्कृतिक पार्श्वभूमीचे आकलन-या कालखंडातील सामाजिक.होईल.<br>२या कालखंडातील विचारसरणी., चळवळी यांच्या साहित्यावरील प्रभावाचा<br>अभ्यास होईल .<br>३विविध साहित्य प्रकारातील ठळक प्रवृती., ग्रंथकार, साहित्यकृती साहित्य प्रकारचा विकासक्रम या अनुषंगाने वाङमयाचा इतिहासाचा परिचय होईल. |
| **Soft Core A (Any one) Optional** | | |
| SCT क्र .<br>१.४ | एका लेखकाचा अभ्यास<br>महात्मा (आधुनिक)<br>जोतीराव फुले | १ .एका लेखकाचा अभ्यास पध्दतीच्या सैद्धांतिक स्वरूपच आकलन होईल.<br>२ .महात्मा फुले यांच्या समग्र वाङ्मयाचा सखोल अभ्यास होईल.<br>३ .महात्मा फुले यांच्या व्यक्तिमत्त्वातील विविध पैलू समजतील .<br>४ .सामाजिक व शैक्षणिक कार्य यांचे आकलन होईल महात्मा फुले यांचे .<br>५ .महात्मा फुले यांच्या वाङ्मयीन कार्यकर्तृत्वाचे वेगळेपण लक्षात येईल . |

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| | | ६ .महात्मा फुले यांच्या कार्याची कालसमर्पकता समजून येईल . |
| SCT क्र . २.४ | मराठी लोकसाहित्य | १ मराठी लोकजीवन आणि .लोकसंस्कृती लोकसाहित्यातून समजून घेता येईल.<br>२.लोकगीते आणि आणि लोककथागीते यांचे स्वरूप आणि वैशिष्ट्ये समजून घेता येईल ,मराठी लोककथा .<br>३.मराठी लोककलेचा मराठी भाषेचा संदर्भात परिचय होईल .<br>४.मराठी लोकसाहित्य अभ्यासकांची परंपरा समजून घेता येईल . |
| **Generic Elective (Any one)** | | |
| OET क्र . १.५ | मराठी भाषा व स्पर्धा परीक्षा | १ .मराठी भाषेचे स्वरूप समजून येईल.<br>२ .मराठी भाषेचे व्याकरण लक्षात येईल.<br>३ .मराठीतील शब्दविचार व विभक्ती याचे ज्ञान अवगत होईल.<br>४ .स्पर्धा परीक्षेतील मराठी भाषेचे स्वरूप महत्त्व लक्षात येईल.<br>५ .तयारी होईल स्पर्धा परीक्षेसाठी मराठी भाषेची. |
| OET क्र . २.५ | सृजनशील साहित्य | १ .सृजनशील लेखनातून प्रकट होणारे मानव आणि समाज यातील सहसंबंध यांचे ज्ञान होईल.<br>२ .सृजनशील लेखनातील विविध अभिव्यक्तीच्या माध्यमांचा अभ्यास होईल.<br>३ .सृजनशील साहित्यप्रकारांची ओळख होईल.<br>४ .अभ्यासल्या जातील सृजनशील लेखनाचे विशेष.<br>५ .सृजनशील लेखन निर्मितीसाठी आवश्यक त्या क्षमतांचा विकास होईल. |
| **पेपर क्रं .** | **अभ्यासपत्रिकेचे नाव** | **साध्यपूर्ती )Out Comes)** |
| **HCT (Hard Core) Compulsory Paper** | | |
| XI HCT 3.1 | आधुनिक भाषाविज्ञान | १.भाषा व्यवहाराचे स्वरूप समजून घेतील .<br>२.भाषाविज्ञानाच्या विविध संकल्पना समजून घेतील आधुनिक .<br>३.भाषाभ्यासाच्या पाश्चात्य संकल्पना समजून घेण्यास मदत होईल . |

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| XII<br>HCT 3.2 | आधुनिक मराठी वाङ्मयाचा इतिहास ते १९६०)<br>(१९९० | १. या कालखंडातील वाड्मयाची सामाजिक व सांस्कृतिक पार्श्वभूमी समजून घेतील .<br>२याच्या प्रेरणामराठी वाङ्म ., प्रवृती, लेखक व साहित्यकृतींचे आकलन होईल.<br>३.प्रस्तुत कालखंडातील मराठी वाङ्मयतील विविध प्रवाहांचा अभ्यास होईल . |
| XIII<br>HCT 3.3 | भाषा व साहित्य :<br>संशोधनाचे पद्धतीशास्त्र | १.संशोधनाचे महत्त्व समजून येईल .<br>२.वेगळेपण समजून घेतील भाषा व साहित्य संशोधनाचे स्वरूप व .<br>३.भाषा व साहित्याच्या संशोधनाचे पद्धतीशास्त्र समजून घेतील . |
| **DSE)Discipline Specific Elective-A** (Any One) | | |
| XIV A<br>DSE 3.1 | एका साहित्य प्रकाराचा अभ्यास कथा : | १.कथा वाङ्मय प्रकाराचा परिचय करून घेतील (<br>२मराठी कथेची जडणघडण (, ऐतिहासिक स्थित्यंतरांचे आकलन होईल.<br>३.मराठी कथा व इतर साहित्याचा अनुबंध समजून घेतील ( |
| XIV B<br>DSE 3.2 | साहित्याचा सामाजिक दृष्टिकोणातून अभ्यास (सैद्धांतिक) | १ .साहित्य आणि समाज यांचा अनुबंध समजून घेतील.<br>२ .सामाजिक घडामोडींचा साहित्यावर पडणारा प्रभाव लक्षात येईल .<br>३ .साहित्यकृतीचे सामाजिक दृष्टीकोणातून अभ्यास व विश्लेषण करता येईल . |
| **Generic Elective B (Any One)** | | |
| XV A<br>OET 3.1 | मराठी भाषा व स्पर्धा परीक्षा | १ .स्पर्धा परीक्षा व भाषेचे स्वरूप विशेष समजून घेतील<br>२.भाषेतील स्तरभेद आणि बोलींचे आकलन होईल .<br>३.विशेष समजून घेतील लोकसाहित्य स्वरूप . |
| XV B<br>OET 3.2 | प्रसारमाध्यमे आणि भाषाव्यवहार | १.भाषाव्यवहार आणि प्रसारमाध्यमांचे स्वरूप समजून घेतील.<br>२मुद्रित.,श्राव्य व दृकश्राव्य माध्यमांतील भाषिक व्यवहार व वेगळेपण समजून घेतील.<br>३.समाजमाध्यमातील भाषाव्यवहार व समकालीन बदल लक्षात घेतील. |

| **पेपर क्रं .** | **अभ्यासपत्रिकेचे नाव** | **साध्यपूर्ती )Out Comes)** |
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| **HCT (Hard Core ) Compulsory Paper** | | |
| XVI<br>HCT 4.1 | समाज भाषाविज्ञान | १ .समाजभाषाविज्ञानाचे स्वरूप व संकल्पना समजून घेतील .<br>२समाज .,संस्कृती आणि भाषा यामधील परस्परसंबंध लक्षात येईल.<br>३.भाषासंपर्क यांचे आकलन होईल भाषाव्यवहार व .<br>४.मराठीच्या विविध बोलींचा समाजभाषावैज्ञानिक अभ्यास करता येईल . |
| XVII<br>HCT 4.2 | आधुनिक मराठी<br>वाङ्मयाचा इतिहास<br>(२०१०ते १९९०) | १.या कालखंडातील वाड्मयाची सामाजिक व सांस्कृतिक पार्श्वभूमी समजून घेतील.<br>२च्या प्रेरणाप्रस्तुत काळातील मराठी वाङमया., प्रवृत्ती लेखक व साहित्यकृतींचा अभ्यास करतील.<br>३.जागतिकीकरणाचा प्रभाव मराठी साहित्यावर कसा पडला याचे आकलन होईल . |
| XVIII<br>HCT 4.3 | शोधप्रबंध लेखन | १.भाषा व साहित्य संशोधन पद्धतीशास्त्र समजून घेतील .<br>२.शोधप्रबंध लेखनाचे स्वरूप लक्षात येईल .<br>३ .संशोधनाचा आराखडा तयार करण्याचे कौशल्य आत्मसात करतील . |
| **DSE )Discipline Specific Elective A** (Any One) | | |
| XIX A<br>DSE 4.1 | एका साहित्य प्रकाराचा<br>अभ्यास कथा : | १ .स्त्रीवादी कथेतील स्त्रीवादी जाणीव समजून घेतील .<br>२ .ग्रामीण कथा लेखनाचे विशेष समजून घेतील .<br>३.कथांची वैशिष्ट्ये लक्षात घेतील दलित .<br>४.नागर कथेचे वेगळेपण समजून घेतील . |
| XIX B<br>DSE 4.2 | साहित्याचा सामाजिक<br>दृष्टिकोणातून अभ्यास<br>उपयोजन)) | १.साहित्य आणि समाज यांचा अनुबंध समजून घेतील .<br>२ .सामाजिक घडामोडींचा साहित्यावर पडणारा प्रभाव लक्षात घेतील .<br>३.वाङ्मयीन व्यक्तीमत्वाची जडणघडण समजून घेतील लेखकाच्या .<br>४ .साहित्यकृतीचे सामाजिक दृष्टिकोणातून विश्लेषण करतील . |
| **Soft Core B (Any One) Optional** | | |

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| XX A<br>SCT 4.1 | सौंदर्यशास्त्र | १ .सौंदर्यशास्त्राचे स्वरूप समजून घेतील .<br>२.सौंदर्यानुभूतीचे तात्त्विक मूल्यांकन लक्षात घेतील .<br>३.साहित्यकृतीचा सौंदर्यशास्त्रीय विचार व दृष्टिकोण समजून सांगतील .<br>४.सौंदर्यशास्त्र रुपबंधाचा विचार लक्षात घेतील . |
| XX B<br>SCT 4.2 | लोकप्रिय साहित्य | १.लोकप्रिय साहित्याचे स्वरूप समजून घेतील .<br>२.मराठीतील लोकप्रिय साहित्याचा उगम व वाटचाल याचे आकलन होईल .<br>३.लोकप्रिय साहित्याच्या भाषेचे वेगळेपण समजून घेतील .<br>४.लोकप्रिय साहित्य आणि वाचकांची अभिरुची यांचा सहसंबंध स्पष्ट करतील. |

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| **Paper No.** | **Paper/Course Name<br>Couse Code** | **COs** | **Semester-I** |
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| **KBP-A-PG-HIN-111** | **Paper No. 1<br>आधुनिक हिंदी गद्य साहित्य** | **CO 1** | छात्र आधुनिक हिंदी गद्य साहित्य के उद्भव और विकास से अवगत हुए । |
| | | **CO 2** | छात्र में आलोचनात्मक दृष्टि का विकास हुआ । |
| | | **CO 3** | छात्र में मानवीय मूल्य तथा संवेदना का विकास हुआ । |
| **KBP-A-PG-HIN-112** | **Paper No. 2<br>भाषा विज्ञान** | **CO 1** | छात्र हिंदी भाषा के अभिलक्षणों से परिचित हुए । |
| | | **CO 2** | छात्र भाषा विज्ञान के विभिन्न अंगों से परिचित हुए । |
| | | **CO 3** | छात्र भाषा और व्याकरण से संबंध से परिचित हुए । |

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| **KBP-A-PG-HIN-113** | **Paper No. 3**<br>**प्रयोजनमूलक हिंदी** | **CO 1** | छात्र प्रयोजनमूलक हिंदी की विशेषताओं से परिचित हुए । |
| | | **CO 2** | छात्र में प्रयोजन दृष्टि विकसित हुई । |
| | | **CO 3** | छात्र हिंदी की पारिभाषिक शब्दावली से परिचित हुए । |
| **KBP-A-PG-HIN-134** | **Paper No. 4**<br>**व्यावसायिक वर्ग पत्रकारिता** | **CO 1** | छात्र हिंदी पत्रकारिता का विकासक्रम स्पष्ट करते है । |
| | | **CO 2** | छात्र पत्रकारिता की सामाजिक उपादेयत स्पष्ट करते है । |
| | | **CO 3** | छात्र नवसंचार माध्यमों का परिचय देते । |
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| **KBP-A-PG-HIN-115 B** | **Paper No. 5**<br>**अनुवाद** | **CO 1** | छात्र अनुवाद के सैद्धातिंक पक्ष से परिचित हुए । |
| | | **CO 2** | छात्र अनुवाद सामाजिक उपादेयता को समझ सके । |
| | | **CO 3** | छात्र अनुवाद में रोजगार के क्षेत्रों से परिचित हुए । |
| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-II** |
| **KBP-A-PG-HIN-121** | **Paper No. 1**<br>**आधुनिक हिंदी गद्य साहित्य** | **CO 1** | छात्र आधुनिक हिंदी गद्य साहित्य के उद्भव और विकास से अवगत हुए । |
| | | **CO 2** | छात्र उपन्यास और निबंध साहित्य से परिचित हुए । |
| | | **CO 3** | छात्र में आलोचनात्मक दृष्टि का विकास हुआ । |
| | | | **Semester II** |
| **KBP-A-PG-** | **Paper No. 2**<br>**भाषा विज्ञान** | **CO 1** | छात्र भाषा के विभिन्न अंगों से परिचित हुए । |
| | | **CO 2** | छात्र हिंदी भाषा की ऐतिहासिकता को स्पष्ट करते हैं । |

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| **HIN-122** | | **CO 3** | छात्र भाषा और व्याकरण का स्पष्ट करते हैं । |
| | | | **Semester II** |
| **KBP-A-PG-HIN-123** | **Paper No. 3**<br>**संगणकीय हिंदी एवं व्यावहारिक हिंदी** | **CO 1** | छात्र संगणकीय ज्ञान से अवगत होते है । |
| | | **CO 2** | छात्र संगणक का प्रयोग करते है । |
| | | **CO 3** | छात्र व्यावहारिक हिंदी से परिचित हुए । |
| **KBP-A-PG-HIN-231** | **Paper No. XI**<br>**हिंदी साहित्य का इतिहास** | **COs** | **Semester-III** |
| | | **CO 1** | छात्र आदिकालीन और भक्तिकालीन साहित्य की जानकारी देते है । |
| | | **CO 2** | छात्र आदिकालीन और भक्तिकालीन रचनाकारों से परिचित हुए । |
| | | **CO 3** | छात्र रीतिकालीन रचना और रचनाकारों से परिचित हुए । |
| **KBP-A-PG-HIN-232** | **Paper No. XII**<br>**काव्यशास्त्र एवं साहित्यालोचन** | | **Semester III** |
| | | **CO 1** | छात्र संस्कृत काव्यशास्त्र के विकासक्रम से परिचित हुए । |
| | | **CO 2** | छात्र संस्कृत आचार्यों द्वारा स्थापित सिद्धन्तों को समझते हैं |
| | | **CO 3** | छात्र भारतीय काव्यशास्त्र की चिंतन परम्परा से परिचित हुए । |
| **KBP-A-PG-HIN-233** | **Paper No. XIII**<br>**अनुसंधान प्राविधि और प्रकिया** | | **Semester III** |
| | | **CO 1** | छात्र अनुसंधान प्राविधि और प्रकिया से परिचित हुए । |
| | | **CO 2** | छात्र अनुसंधान के लिए विविध पद्दतियों का प्रयोग करते हैं । |
| | | **CO 3** | छात्र साहित्यिक अनुसंधान के विविध क्षेत्रों से परिचित हुए । |

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| **KBP-A-PG-HIN-234 A** | **Paper No. XIV A प्राचीन एव मध्यकालीन काव्य** | | **Semester III** |
| | | **CO 1** | छात्र प्राचीन एव मध्यकालीन काव्य परंपरा से परिचित हुए । |
| | | **CO 2** | छात्र विद्यापति के जीवन और साहित्यिक परिचय से अवगत हुए । |
| | | **CO 3** | छात्र सूफी काव्य और पदमावत महाकाव्य से परिचित हुए । |
| **KBP-A-PG-HIN-235 B** | **Paper No. XV B फिल्म मीमांसा** | | **Semester III** |
| | | **CO 1** | छात्र हिंदी फिल्म के विकासात्मक परिचय को जानते है । |
| | | **CO 2** | छात्र फिल्म निर्मिती की प्रक्रिया से अवगत हुए । |
| | | **CO 3** | छात्र फिल्मों में आए सामाजिक विभिन्न अंगों से परिचित हुए । |
| **. KBP-A-PG-HIN-241** | **Paper No. XVI हिंदी साहित्य का इतिहास** | **COs** | **Semester-IV** |
| | | **CO 1** | छात्र आधुनिक हिंदी काव्यधाराओं से परिचित हुए । |
| | | **CO 2** | छात्र आधुनिक गद्य की विविध विधाओं से परिचित हुए । |
| | | **CO 3** | छात्र में साहित्यिक रचनाओं की समीक्षा दृष्टी का विकास हुआ |
| | | | **Semester- IV** |
| **KBP-A-PG-HIN-242** | **Paper No. XVII काव्यशास्त्र एवं साहित्यालोचन** | **CO 1** | छात्र पाश्चात्य कव्यशात्रिय सिद्धन्तों से परिचित हुए । |
| | | **CO 2** | छात्र में पाश्चात्य काव्यशात्रिय विद्वानों के विचारों से परिचित हुए । |
| | | **CO 3** | छात्र में काव्यशास्त्रीय समीक्षा दृष्टि का विकास हुआ । |
| **KBP-A-PG-** | **Paper No. XVIII Dissertation** | | **Semester- IV** |
| | | **CO 1** | छात्र अनुसंधान की रुपरेखा तैयार करने में सक्षम हुए । |

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| **HIN-243** | | **CO 2** | छात्र अनुसंधान प्रकल्प तैयार करने लगे । |
| | | **CO 3** | छात्र अनुसंधान की प्रक्रिया से अवगत हुए । |
| **KBP-A-PG-HIN-244 A** | **Paper No. XIX A प्राचीन एवं मध्यकालीन काव्य** | | **Semester- IV** |
| | | **CO 1** | छात्र मध्यकालीन एवं रीतिकालीन काव्य परंपरा से परिचित हुए । |
| | | **CO 2** | छात्र सूरदास के भ्रमरगीत से अवगत हुए । |
| | | **CO 3** | छात्र भूषण तथा उनके वीर रसपूर्ण काव्य से परिचित हुए । |
| **KBP-A-PG-HIN-245 B** | **Paper No. XX B दलित आदिवासी साहित्य** | | **Semester- IV** |
| | | **CO 1** | छात्र आधुनिक हिंदी साहित्य में प्रवाहित विचारधारा से परिचित हुए । |
| | | **CO 2** | छात्र हिंदी दलिर एवं आदिवासी साहित्य से परिचित हुए । |
| | | **CO 3** | छात्र में सामाजिक मूल्यों का बीजारोपण हुआ । |

English

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|---|---|---|---|
| I | British Literature KBP-PG-A-ENG1101 | | **Semester I** |
| | | CO 1 | Compare major trends & major writers in British Literature |
| | | CO 2 | Assimilate the works of major British authors. |
| III | Indian English Literature KBP-PG-A-ENG1102 | CO 1 | Assimilate selected masterpieces in Indian English Literature |
| | | CO 2 | Appreciate the works of Indian authors writing in English. |
| III | Introduction to applied linguistics KBP-PG-A-ENG1103 | CO 1 | Classify the concepts of applied linguistics are introduced to the students |
| | | CO 2 | Apply linguistics theories to different types of texts |
| IV | Comparative | CO 1 | Illustrate the students to the discipline of comparative literature. |

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| | Literature KBP-PG-A-ENG1104 | CO 2 | Familiarize the students with the definition, nature, scope, concepts, issues, and methodologies of comparative literature |
| V | English for Competitive Examination KBP-PG-A-ENG1105 | CO 1 | Apply the knowledge in the competitive exams. |
| | | CO 2 | Relate English as a compulsory subject in various competitive exams |
| | | | **Semester II** |
| VI | British Literature KBP-PG-A-ENG1206 | CO 1 | Describe major movements in British literature as reflected through literary works |
| | | CO 2 | Develop the linguistic competence along with the literary competence of the students |
| VII | Indian English Literature KBP-PG-A-ENG1207 | CO 1 | Describe major movements in India as reflected through literary works. |
| | | CO 2 | Compare the literary achievements of some significant Indian Diaspora writers. |
| VIII | Introduction to applied linguistics KBP-PG-A-ENG1208 | CO 1 | Acquire languages based on person place and society |
| | | CO 2 | Interpret Students with the techniques to analysis prose and poetry stylistically |
| IX | Comparative Literature KBP-PG-A-ENG1209 | CO 1 | Relate comparative literature beyond regional and national boundaries |
| | | CO 2 | Apply the rationale of comparative literature in multilingual, multicultural and multinational studies. |
| X | English for Competitive Examination KBP-PG-A- | CO 1 | Apply the knowledge for competitive exams of various kinds especially meant for testing ability in English language. |
| | | CO 2 | To introduce students with the common question types asked in competitive examinations concerning English- grammar, vocabulary, comprehension, and other significant topics. |

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| | ENG1210 | | |
| | | | **Semester III** |
| XI | Contemporary Critical Theory<br>KBP-PG-A-ENG1311 | CO 1 | Analyze how various critical theories developed in the course of the 20th Century. |
| | | CO 2 | Illustrate and justify contemporary theories to the best of their ability. |
| XII | Postcolonial Literature<br><br>KBP-PG-A-ENG1312 | CO 1 | Analyze and interpret the colonial and postcolonial texts applying the postcolonial literary theory. |
| | | CO 2 | Criticize how race, class, gender, history and identity are presented and problematized in the literary texts. |
| XIII | Research Methodology<br><br>KBP-PG-A-ENG1313 | CO 1 | Construct knowledge of basic concept and framework of research and its methodologies. |
| | | CO 2 | Develop an understanding of various research designs and techniques. |
| XIV | Translation Studies<br>KBP-PG-A-ENG1314 | CO 1 | Comprehend translation studies as a separate discipline of knowledge |
| | | CO 2 | Analyze the nature, scope and theoretical issues in translation studies |
| XV | 21st Century Skills (Soft Core)<br>KBP-PG-A-ENG1315 | CO 1 | Apply soft skills such as critical thinking and problem solving. |
| | | CO 2 | Develop a sense of comprehensibility by exposure through soft skills. |
| | | | **Semester IV** |
| XVI | Contemporary Critical | CO 1 | Develop competency to mark differences and similarities in these theories and schools. |

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| | Theory<br>KBP-PG-A-ENG1416 | | |
| | | CO 2 | Acquire ability to understand their own theoretical/critical stance as readers. |
| XVII | Postcolonial Literature<br><br>KBP-PG-A-ENG1417 | CO 1 | Develop the ability to read, comprehend and engage with postcolonial literary criticism. |
| | | CO 2 | Discuss how a literary text, explicitly or allegorically represents various aspects of colonial oppression. |
| XVIII | Research Methodology<br><br>KBP-PG-A-ENG1418 | CO 1 | Develop an understanding of the ethical dimensions of conducting applied research. |
| | | CO 2 | Assimilate e the components of scholarly writing and evaluate its quality. |
| XIX | Translation Studies<br>KBP-PG-A-ENG1419 | CO 1<br>CO 2 | Create awareness of cultural, ethical, and epistemological aspects of translation and interpreting practices. |
| | | | Understand theories of and approaches to a variety of translation and interpreting fields. |
| XX | 21st Century Skills (Soft Core)<br>KBP-PG-A-ENG1420 | CO 1 | Solve problems they encounter. |
| | | CO 2 | Show confidence in dealing with complexity and ambiguity. |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-I** |
| **Paper : I** | Early India (From the beginning to 3rd Century B. C.) | CO 1 | identify and classify the ancient Indian Historical sources |
| | | CO 2 | compare the Indus civilization and Vedic Culture |

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| | KBP-A-PG-HIS-111 | CO 3 | understand the Origin of Buddha and Jain Religion |
| | | CO 4 | evaluate the Ashokas Religios policy and Mauryan administration |
| **Paper : II** | Aspects of Medieval Indian History (1206-1707) KBP-A-PG-HIS-112 | CO 1 | Compare different sources of medieval period |
| | | CO 2 | acquaint how trade and industry flourished during the sultanate period |
| | | CO 3 | understand how Indian architecture was influenced by Muslim architecture |
| | | CO 4 | Relate the knowledge of changes which took place in Medieval Indian history |
| **Paper :III** | History of World (1900 A. D. to 1970 A. D.) KBP-A-PG-HIS-113 | CO 1 | understand and elaborate the concept of modern world |
| | | CO 2 | criticize the first world war |
| | | CO 3 | Relate the society and Russian revolution and its impact on world |
| | | CO 4 | evaluate the dictatorship before the second world war |
| **Paper : IV** | Legacy of the Maratha KBP-A-PG-HIS-114(A) | CO 1 | understand the political idea and principles in Martha period |
| | | CO 2 | Describe the socio-religious policy under Maratha |
| | | CO 3 | understand the importance of performing arts in Maratha period |
| | | CO 4 | develop the skill the survey of forts in Maratha period |
| **Paper : V** | Making of 19th Century Maharashtra KBP-A-PG-HIS-115(A) | CO 1 | understand about how the Social life of the 19th century has changed |
| | | CO 2 | compare Peshwa education system with Modern education system |
| | | CO 3 | compare Peshwa Women's life with modern Women's life |
| | | CO 4 | understand the study of the freedom movement in the Gandhi era |

| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-II** |
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| **Paper : VI** | Ancient Indian | CO 1 | Evaluate the Golden age of Gupta period |

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| | History from 3rd B.C. Century to 650 A.D. KBP-A-PG-HIS-121 | CO 2 | understand the North and South dynasty and its cultural impact |
| | | CO 3 | Assimilate the literature in Ancient India |
| | | CO 4 | Appraise the art and architecture in ancient India |
| **Paper : VII** | History of Medieval India 1206 to 1707 KBP-A-PG-HIS-122 | CO 1 | make the comparative study of the education system of Hindus and Muslis in Medieval times |
| | | CO 2 | understand the importants of administration during Shershah period |
| | | CO 3 | understand the importants of religious Sects in medieval times |
| | | CO 4 | make a comparative study of Medieval land revenue systms |
| **Paper :VIII** | History of World (1900 A. D. to 1970 A. D.) KBP-A-PG-HIS-123 | CO 1 | compare the first and second world war |
| | | CO 2 | understand the cold war and its impact on world |
| | | CO 3 | Describe the Non Alignment Movement |
| | | CO 4 | compare the Human right movement in Africa and Asia subcontinent. |
| **Paper : IX** | Institution Under the Maratha KBP-A-PG-HIS-124(A) | CO 1 | understand the origin and characteristics of Maratha period |
| | | CO 2 | evaluate the religious and cast system under Maratha |
| | | CO 3 | criticize the administration of Maratha power |
| | | CO 4 | understand the contribution of Art in Maratha period |
| **Paper : X** | Modern Maharashtra 1960 to 2000 KBP-A-PG-HIS-125(A) | CO 1 | understand how the Maratha State developed |
| | | CO 2 | compare Modern economy and Maratha economy |
| | | CO 3 | understand about various exploitative Movements in Maharashtra |
| | | CO 4 | understand development of that field to Political , cooperative sector and education since1960 |

| Paper No. | Paper/Course Name Course Code | COs | Semester-III |
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| **Paper : XI** | **Historiography KBP-A-PG-HIS –2311** | CO 1 | understand the Important of History . |
| | | CO 2 | classify the different type of History. |
| | | CO 3 | create the interest of Research Methodology. |
| | | CO 4 | Explain the students the importance of theory and Philosophy in History |
| **Paper : XII** | **History of India (1757 to 1857 A.D.) KBP-A-PG-HIS-2312** | CO 1 | Describe the $18^{th}$ century social, economic & political situation |
| | | CO 2 | Describe the policy of British Imperialism. |
| | | CO 3 | Assimilate British Administration and their policies. |
| | | CO 4 | understand educational and newspaper policies of British in a critical manner. |
| **Paper : XIII** | **Research Methodology KBP-A-PG-HIS-2313** | CO 1 | identify the historical sources for research problem. |
| | | CO 2 | classify the historical sources. |
| | | CO 3 | Apply research methodology in social science. |
| | | CO 4 | criticize the primary and secondary historical sources. |
| **Paper : XIV** | **Women in Indian History KBP-A-PG-HIS-2314-A** | CO 1 | Classify the different sources of Woman in Indian History |
| | | CO 2 | analyze the views of different feminist thinkers |
| | | CO 3 | compare the customary and legal study of Women in India |
| | | CO 4 | explain to the students the history of the feminist movement in India |
| **Paper : XV** | **Historical Application in** | CO 1 | categorize the definition, meaning, objectives and contribution of tourism in its history. |
| | | CO 2 | Compare information on different types of tourism. |

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| | **Tourism**<br>**KBP-A-PG-HIS-2315-A** | CO 3 | analyze the financial contribution of tourism. |
| | | CO 4 | Apply comparative assessments of historically important monuments and religious sites. |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-IV** |
| **Paper : XVI** | **Historiography**<br>**KBP-A-PG-HIS-2416** | CO 1 | compare the different Knowledge of Research theory |
| | | CO 2 | Explain to students the Importance of rewriting History. |
| | | CO 3 | compare the different Historians opinion. |
| | | CO 4 | Understand the different streams in Historiography |
| **Paper : XVII** | **History of India (1757 to 1857 A.D.)**<br>**KBP-A-PG-HIS-2417** | CO 1 | Assimilate the concept of British India in Orientalist, Evangelical and Utilitarian. |
| | | CO 2 | express Economical Imperialism in British India. |
| | | CO 3 | comprehend Industrial development of Indian. |
| | | CO 4 | explicit the evaluation of 1857 mutiny. |
| **Paper : XVIII** | **Research Methodology**<br>**KBP-A-PG-HIS-2418** | CO 1 | understand the steps of research methods in research problem. |
| | | CO 2 | develop the ability to write research project. |
| | | CO 3 | solve the research problem. |
| | | CO 4 | design the research paper and dissertation. |
| **Paper : XIX** | **Women in Indian History**<br>**KBP-A-PG-HIS-2419-A** | CO 1 | create awareness of female work force in the Students |
| | | CO 2 | compare the women education for Ancients to Modern period |
| | | CO 3 | Understand the important different organization related to Women |
| | | CO 4 | Explain the effect of different religions on Women. |

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| **Paper : XX** | **Historical Application in Tourism KBP-A-PG-HIS-2420-A** | CO 1 | analyze the role and contribution of museums in tourism. |
| | | CO 2 | Analyze the knowledge of major museums in India. |
| | | CO 3 | Compare knowledge of forts, caves and important historical places. |
| | | CO 4 | evaluate important historical events like Raigad, Panipat, Khultabad, Srirangapatna, Solapur etc. |

Economics

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| **M.A.-I Paper-I** | **Micro Economic Analysis KBP-A- PG-ECO-111** | | ***The student will be able to----------*** |
| | | **CO 1** | Identify the Basic Concepts of Micro Economics |
| | | **CO 2** | Analyze Indifference Curve Technique and its Application |
| | | **CO 3** | Explain the Theories of Production and Costs |
| | | **CO 4** | Understand the Knowledge of Price and Output Determination in various Markets |
| **M. A.-I Paper -II** | **Economics of Growth and Development KBP-A- PG-ECO-112** | CO 1 | Develop the Knowledge about the Theories of Economic Growth |
| | | CO 2 | Understand Social and Institutional Aspects of Development |
| | | CO 3 | Develop the Knowledge about the Theories of Development |
| | | CO 4 | Explain the Approaches of Development |
| **M. A.-I Paper -III** | **Economics of Environment KBP-A- PG-ECO-113** | CO 1 | Explain the Scope, Significance and problems of environmental economics |
| | | CO 2 | Classify various environmental concepts |
| | | CO 3 | Understand the role of different sectors in environment protection |
| | | CO 4 | Explain various methods of valuing environment |
| **M. A.-I Paper -IV** | **Principles and Practice of Cooperation KBP-A- PG-ECO-114(A)** | **CO 1** | Identify the features and Principles of Cooperation |
| | | **CO 2** | Understand the structure, progress and problems of cooperative credit |
| | | **CO 3** | Design noncredit cooperative societies |
| **M. A.-I** | **Financial Institutions and** | **CO 1** | Identify the nature and role of financial system |

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| **Paper -V** | **Markets KBP-A- PG-ECO-114(B)** | **CO 2** | Describe the theorists of Interest rate determination |
| | | **CO 3** | Understand the functions and objectives of RBI, Commercial banks and Monitory policy |
| | | **CO 4** | Develop the modern knowledge of banking services |
| **M.A.-I Paper-VI** | **Micro Economic Analysis –KBP-A-KBP-A-PG-ECO-121** | **CO 1** | Assess the alternative theories of the firm |
| | | **CO 2** | Explain the theories of distribution |
| | | **CO 3** | Explain the concept of welfare economics |
| | | **CO 4** | Understand the risk and uncertainties in business |
| **M. A.-I Paper -VII** | **Economics of Growth and Development KBP-A-PG-ECO-122** | **CO 1** | Understand the importance of different sectors in developing countries |
| | | **CO 2** | Analyze the importance of trade and economic development |
| | | **CO 3** | Explain the role of macro economic policies in developing countries |
| | | **CO 4** | Identify the situation of allocation of resources in developing countries |
| **M. A.-I Paper -VIII** | **Economics of Environment KBP-A-PG-ECO-123** | **CO 1** | Aware about environmental degradation |
| | | **CO 2** | Aware about environmental pollution |
| | | **CO 3** | Choose the proper methods of environmental protection |
| | | **CO 4** | Assess the government policies of environment |
| **M. A.-I Paper -IX** | **Principal and practice of cooperation KBP-A-PG-ECO-124(A)** | **CO 1** | Understand the procedures of foreign countries of cooperatives societies |
| | | **CO 2** | Explain the role of government in cooperative movement |
| | | **CO 3** | Identify the role of institutional support in development of cooperatives |
| | | **CO 4** | Perceive the importance of cooperatives in planning |
| **M. A.-I Paper - X** | **Financial institutions and markets KBP-A-PG-ECO-124(B)** | **CO 1** | Understand the meaning, types, Problems of non bank financial intermediaries |
| | | **CO 2** | Identify the functions of money market and capital market in financial system |
| | | **CO 3** | Examine the financial markets in India |

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| | | **CO 4** | Compare the international financial market |
| **M. A.-II Paper -IX** | **Macro Economic Analysis KBP-A-PG-ECO-231** | CO 1 | Explain the Different Forms of National Income Accounting |
| | | CO 2 | Explain Keynes Ideas of Consumption Function and Investment Function |
| | | CO 3 | Discuss the Approaches of Supply of Money |
| | | CO 4 | Describe the Approaches of Demand for Money |
| **M. A.-II Paper -X** | **Public Economics KBP-A-PG-ECO-232** | CO 1 | Explain the Role of Government in Various Economy |
| | | CO 2 | Explain the Problem of Allocation of Recourses |
| | | CO 3 | Discuss on Various Social Problems like Poverty, Unemployment, Income Inequality and Regional Imbalance |
| | | CO 4 | Identify Various Views of Public Expenditure and Taxation |
| **M. A.-II Paper -XI** | **Labour Economics KBP-A-PG-ECO-234(A)** | **CO 1** | Identify the Different Issues of Labour Market |
| | | **CO 2** | Examine the Various Employment Policies in India |
| | | **CO 3** | Compare Various Theories of Wage Determination |
| | | **CO 4** | Analyze Different Policies of Labour Welfare |
| **M. A.-II Paper -XII** | **Agricultural Development of India KBP-A-PG-ECO-235 (B)** | **CO 1** | Identify the Role of Agriculture in Economic development of India |
| | | **CO 2** | Discuss on the Situation of Land Utilization and Land Reforms in India |
| | | **CO 3** | Select Proper New Agricultural Technology in his Field |
| | | **CO 4** | Discuss the Problems raised due to the impact of WTO |
| **M. A.-II Paper -XIII** | **Macro Economic Analysis KBP-A-PG-ECO-241** | **CO 1** | Asses the Approaches of Post Keynesian Demand for Money |
| | | **CO 2** | Explain the importance of Macro Economics in an open Economy |
| | | **CO 3** | Identify the Information of Various Theories of Inflation |
| | | **CO 4** | Identify new Classical approaches of Macro Economics |

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| **M. A.-II Paper -XIV** | **Public Economics KBP-A-PG-ECO-242** | **CO 1** | Explain the View of Public Debt |
| | | **CO 2** | Assess the Role of Fiscal Policy in economic Development |
| | | **CO 3** | Explain Various Aspects of Fiscal Federalism |
| | | **CO 4** | Discuss on Tax System and Public Expenditure in India |
| **M. A.-II Paper -XV** | **Labour Economics KBP-A-PG-ECO-244(A)** | **CO 1** | Examine the Role of Trade Union in Dissolving the Industrial Disputes |
| | | **CO 2** | Asses the Role of Government in Social security |
| | | **CO 3** | Identify the Problems of Child Labors and Female Labors |
| | | **CO 4** | Discuss the Problems Raised Due to the Impact of Globalization on Labour |
| **M. A.-II Paper - XVI** | **Agricultural Development of India KBP-A-PG-ECO-245(A)** | **CO 1** | Adapt the Knowledge of Agricultural Marketing and Prices |
| | | **CO 2** | Explain the Concepts of Food Security and Agricultural Finance |
| | | **CO 3** | Discuss on the Importance of Agro industries and its Problems |
| | | **CO 4** | Analyze the Characteristics and Problems of Agricultural Labour |

Geography

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| Paper I | Geomorphology- I HCT-1.1 | | **Semester-I** |
| | | **CO 1** | Understand the fundamental concepts of Geomorphology. |
| | | **CO 2** | Acquaint the Interior of the Earth and Isostacy. |
| | | **CO 3** | Understand the Geosyncline and its theories by Kobber and Holmes. |
| | | **CO 4** | Aware the movements of the earth, endogenetic and exogenetic forces of Earth. |
| Paper II | Climatology- I HCT-1.2 | **CO 1** | Interpret the Atmosphere and Isolation of climatic aspects. |

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| | | **CO 2** | Summaries the Atmospheric Pressure and Winds. |
| | | **CO 3** | Analyzing Humidity, Condensation and Precipitation |
| | | **CO 4** | Define Atmospheric Disturbances- Tropical and Temperate Cyclone |
| Paper III | Oceanography and Geo-hydrology HCT-1.3 | **CO 1** | Explaining the Origin of Ocean Basins and Ocean Floor. |
| | | **CO 2** | Examining the properties of Sea water and Ocean Deposits. |
| | | **CO 3** | Measuring the circulation of Ocean water. |
| | | **CO 4** | Understand the hydrological cycle, occurrence and origin of Groundwater. |
| Paper IV | Economic Geography SCT-1.2 | **CO 1** | Annotating the fundamental concepts of Economic Geography. |
| | | **CO 2** | Criticizing the Industrial Location Therioes by Weber and Losch. |
| | | **CO 3** | Understand the energy resources and energy crisis. |
| | | **CO 4** | Appraising modes of transportation and trade. |
| Practical I | Representation of Landform and Topographical Map HCP-1.1 | **CO 1** | Understand various geomorphic data using Toposheets. |
| | | **CO 2** | Analyzing maps and representation methods of reliefs in Toposheet. |
| | | **CO 3** | Expressing distinct geographical landforms |
| | | **CO 4** | Calculating drainage pattern through stream ordering, bifurcation ratio and drainage density |
| Practical II | Study of Weather Maps HCP-1.2 | **CO 1** | Understand the weather conditions in day to day human life. |
| | | **CO 2** | Explaining relationship between weather elements like a rainfall, |
| Practical III | Analysis of Climatic Data HCP-1.3 | **CO 1** | Understand climatic data and its Importance |
| | | **CO 2** | Preparing use of climatic data to communicate effectively by graphs, chart and diagrams. |
| Practical IV | Analysis of Socio-Economic Data- I SCP-1.1 | **CO 1** | Interpret of socio-economic data and aid in drawing effective Conclusions |
| | | **CO 2** | Sketching flow line map, proportional circles and proportional spheres. |

| Semester-II | | | |
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| Paper V | Geomorphology-II HCT-2.1 | **CO 1** | Relating the origin of continents and ocean. |
| | | **CO 2** | Attributing cycle of erosion and work of Fluvial, Glacial, Coastal, Aeolian & Karst in landforms. |
| | | **CO 3** | Criticizing different scholar views of slope development. |
| | | **CO 4** | Determining applied and recent trends of geomorphology. |
| Paper VI | Climatology-II HCT-2.2 | **CO 1** | Expressing classification of climate in world. |
| | | **CO 2** | Predicting drought condition and knows the agro-climatic regions of India. |
| | | **CO 3** | Negotiating relationship between climate and human life. |
| | | **CO 4** | Estimating applied climatology- climate, natural vegetation and agriculture |
| Paper VII | Population Geography SCT-2.1 | **CO 1** | Understand association between demographic & socio economic |
| | | **CO 2** | Categorizing Population Distribution Pattern and Population Composition. |
| | | **CO 3** | Tabulating Population Growth & Changes in India. |
| | | **CO 4** | Highlighting the population problems and prospect in India. |
| Paper VIII | Regional Geography of India OET-2.1 | **CO 1** | Understand location and physiographic division in India. |
| | | **CO 2** | Tabulating population growth and distribution with agriculture. |
| | | **CO 3** | Outlining the mineral resources and Power Resources in India. |
| | | **CO 4** | Explaining the concept of regionalization, formal and functional region. |
| Practical V | Study of Landforms Analysis Techniques HCP-2.1 | **CO 1** | Analyzing the slope and its types |
| | | **CO 2** | Identifying different profiles of landform |
| | | **CO 3** | Measuring the different types of slope determination. |
| Practical VI | Statistical Techniques in | **CO 1** | Applying statistical methods in analysis of Geographical data. |

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| | Geography- I HCP-2.2 | **CO 2** | Measuring frequency distribution- Histogram, Polygon and Ogive Curve. |
| | | **CO 3** | Calculating measures of central tendency- Mean, Median and Mode. |
| | | **CO 4** | Assessing absolute measures of dispersion. |
| Practical VII | Statistical Techniques in Geography-II SCP-2.1 | **CO 1** | Analyze various statistical tools applied in geography. |
| | | **CO 2** | Explaining the relative measurement of dispersion. |
| | | **CO 3** | Testing the correlation analysis Karl Pearson and Spearman. |
| Practical VIII | Analysis of Socio-Economic Data- II OEP-2.1 | **CO 1** | Understand the various techniques of analysis of socio Economic Data |
| | | **CO 2** | Illustrating Compound Pyramids and Superimposed Pyramids. |
| | | **CO 3** | Explaining the relationship variables, graphs and diagram. |
| **Semester III** | | | |
| Paper IX | Agricultural Geography HCT 3.1 | **CO 1** | Knowledge the term, origin and approaches of Agricultural geography. |
| | | **CO 2** | Considering the different determinants of agriculture |
| | | **CO 3** | Assessing the world agricultural system. |
| | | **CO 4** | Examining the delimitation techniques of agricultural regions |
| Paper X | Settlement Geography HCT 3.2 | **CO 1** | Relating to the term, nature, scope, evolution and trend of settlement geography |
| | | **CO 2** | Knowledge the site, situation and functional classification of rural settlement |
| | | **CO 3** | Assessing the distinct morphological structure of cities |
| | | **CO 4** | Criticizing the theories of Christaller and August Losch of Human Settlement. |
| Paper XI | Biogeography SCT 3.1 | **CO 1** | Knowledge the definition, significance, branches of Biogeography. |
| | | **CO 2** | Estimating the functions and major biomes in the world. |
| | | **CO 3** | Contrasting the plant geography and zoo geography |

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| | | **CO 4** | Relating to Paleorecords and its climatic changes |
| Paper XII | Cultural Geography OET 3.1 | **CO 1** | Understand the definition, nature and significance of Cultural Geography. |
| | | **CO 2** | Interpreting the cultural diversity, cultural hearths and world cultural realms. |
| | | **CO 3** | Explaining the socio-cultural development and well being indicators. |
| | | **CO 4** | Estimating cultural dimensions and diffusion of religion and ethnic traits. |
| Practical IX | Quantitative Techniques in Economic Geography HCP 3.1 | **CO 1** | Estimating the quantitative techniques in agricultural geography |
| | | **CO 2** | Acquaint the quantitative techniques applied in marketing geography |
| Practical X | Introduction to Computer HCP 3.2 | **CO 1** | Understand the terms, concepts, involved in computer. |
| | | **CO 2** | Explaining fundamental concepts and application of computer. |
| | | **CO 3** | Determining basic facts of computer Networking |
| Practical XI | Applications of Computer in Geography SCP 3.1 | **CO 1** | Aware with geographical data and data structure. |
| | | **CO 2** | Apprise the computer in cartography |
| | | **CO 3** | Explain the representation of geographic data using various computational methods by computer. |
| | | **CO 4** | Prepare and design maps and graphs with the help of computer software. |
| Practical XII | Quantitative Techniques in Population and Settlement Geography OEP 3.1 | **CO 1** | Understand the quantitative techniques in population geography |
| | | **CO 2** | Acquaint the quantitative techniques applied in settlement geography. |
| | | **CO 3** | Measure birth rates, death rates, Population projection by various Quantitative techniques. |
| | | **CO 4** | Examine the various quantitative Techniques in Settlement Geography |
| **Semester IV** | | | |
| Paper XIII | Regional Planning and Development in India | **CO 1** | Analyze the basic concept of Region and Regional planning |
| | | **CO 2** | Illustrate the Indicators of Development in regional planning and Regional imbalances in India. |

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| | HCT 4.1 | **CO 3** | Examine the application of theories in Regional Planning |
| | | **CO 4** | Explain the Multi-level Planning in Regional Planning |
| Paper XIV | Development of Modern Geography HCT 4.2 | **CO 1** | Express the initial development Stage of modern Geography |
| | | **CO 2** | Distinguish dichotomies in modern Geography |
| | | **CO 3** | Explain contribution of eminent Geographers in the development of modern Geography. |
| | | **CO 4** | Analyze recent trends in modern Geography |
| Paper XV | Political Geography HCT 4.3 | **CO 1** | Describe the Fundamentals of Political Geography. |
| | | **CO 2** | Explain themes and concepts of Political Geography. |
| | | **CO 3** | Summaries Theories and Geopolitical significance of different places in political Geography. |
| | | **CO 4** | Analyze recent issues in Political Geography. |
| Paper XVI | Geography of Tourism SCT 4.1 | | Describe the general features of tourism |
| | | | Illustrate the Scenario of tourism development in India. |
| | | | Analyze the Positive and negative impacts of tourism |
| | | | Explain tourism status of Maharashtra. |
| Practical XIII | Introduction to Remote sensing and GIS HCP 4.1 | | Illustrate the structural arrangement and application of the Remote Sensing. |
| | | | Explain the general features of GIS. |
| | | | Summaries knowledge about Aerial photography. |
| Practical XIV | Application of Remote Sensing HCP 4.2 | | Express knowledge about Indexing and Photogrammetry of aerial photographs. |
| | | | Interpret the knowledge of Interpretation and mapping of aerial photographs. |
| | | | Explain visual interpretation of satellite image. |
| Practical XV | Research Methodology | | Explain fieldwork, techniques of data Collection and its Presentation. |

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| | and Project Report HCP 4.3 (MP) | | Describe Importance of Sampling in Research and skill of report writing. |
| | | | Express knowledge about format of project report. |

Rayat Shikshan Sanstha's

**KARMAVEER BHAURAO PATIL MAHAVIDYALAYA,PANDHARPUR**

# (Autonomous)

## Course Outcomes (COs)

## BCA

| Paper No. | Paper/Course Name Couse Code | COs | Semester-III |
|---|---|---|---|
| | | | *Student will be able to*: |
| **1** | **OOP with C++-I KBP-S-BCA-2301** | **CO 1** | Illustrate the features of C++ supporting object oriented programming |
| | | **CO 2** | Develop the programs using an object oriented programming language |
| | | **CO 3** | Model the object-oriented concept using C++ |
| 2 | **Data Structures using 'C'-I KBP-S-BCA-2302** | **CO 1** | Analyze algorithms and algorithm correctness. |
| | | **CO 2** | Demonstrate the application of stack. |
| | | **CO 3** | Organize the data using queue. |
| | | **CO 4** | Experiment with linked list. |
| 3 | **Database Management System KBP-S-BCA-2303** | **CO 1** | Demonstrate database concepts and structures and query language |
| | | **CO 2** | Design the E R model and relational model |
| | | **CO 3** | Make use of concurrencycontrol |
| | | **CO 4** | Detect database recovery |
| 4 | **S/w Testing & Quality Assurance KBP-S-BCA-2304** | **CO 1** | Implement various test processes for quality improvement |
| | | **CO 2** | Design test planning. |
| | | **CO 3** | Determine the test process |
| | | **CO 4** | Apply the software testing techniques in commercial environment |
| 5 | **Operating System** | **CO 1** | Explain basic concepts about operating system. |
| | | **CO 2** | Illustrate process management and scheduling. |

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| | **KBP-S-BCA-2305** | **CO 3** | Analyze memory management technique |
| | | **CO 4** | Compare various file systems and its operating systems examples. |
| 6 | **Computer Networks-I KBP-S-BCA-2306** | **CO 1** | Define the basic concepts in data communication & networking. |
| | | **CO 2** | Illustrate the layered protocol model |
| | | **CO 3** | Analyze and evaluatephysical layer protocols |
| | | **CO 4** | Determine and correct the different errors in data link layer. |
| 7 | **Web Development using PHP KBP-S-BCA-2307** | **CO 1** | Develop PHP scripts to handle HTML forms. |
| | | **CO 2** | Apply regular expressions including modifiers, operators, and metacharacters. |
| | | **CO 3** | Create PHP programs that use various PHP library functions, and that manipulate files and directories. |
| | | **CO 4** | Analyze and solve various database tasks using the PHP language. |
| | | **CO 5** | Analyze and solve common Web application tasks by writing PHP programs. |

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-IV** |
|---|---|---|---|
| | | | *Student will be able to*: |
| **1** | **OOP with C++-II KBP-S-BCA-2401** | **CO 1** | Apply an inheritance conceptin C++. |
| | | **CO 2** | Examine and handle the run time errors |
| | | **CO 3** | Classify the stream I/O. |
| 2 | **Data Structures using 'C'-II KBP-S-BCA-2402** | **CO 1** | Illustrate the tree concepts. |
| | | **CO 2** | Explain the graph concepts. |
| | | **CO 3** | Apply the sorting techniques on data. |

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| | | **CO 4** | Summarize the searching techniques |
| 3 | **MySQL KBP-S-BCA-2403** | **CO 1** | Explain components of MySQL |
| | | **CO 2** | Identify basic SQL functions. Describe database structures. |
| | | **CO 3** | Apply the different privileges to users in MySQL. |
| | | **CO 4** | Apply data constraints and Business rule constraints. |
| | | **CO5** | Create the Stored Procedures and cursor. |
| 4 | **Ethics and Cyber law KBP-S-BCA-2404** | **CO 1** | Identify and analyze statutory, regulatory, constitutional, and organizational laws that affect the information technology professional. |
| | | **CO 2** | Explain Information Technology Act-2000 |
| | | **CO 3** | Apply diverse viewpoints to ethical dilemmas in the information technology field and recommend appropriate actions. |
| | | **CO 4** | Implement the Foot Printing. |
| 5 | **Angular JS KBP-S-BCA-2405** | **CO 1** | Explain the basic concepts in Angular JS |
| | | **CO 2** | Explain the Role of a Controller and filters. |
| | | **CO 3** | Create an Angular Forms. |
| | | **CO 4** | Develop the Single Page Application(SPA). |
| 6 | **Advanced Computer Networks KBP-S-BCA-2406** | **CO 1** | Analyze the Routing Algorithm and the Congestion Control Algorithm |
| | | **CO 2** | Utilize the protocols of computer networks, and how they can be used to assist in network design and implementation. |

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| | | **CO 3** | Implement the Network and Web Security techniques. |
| | | **CO 4** | Make use of different Network Services |
| 7 | **Python Programming KBP-S-BCA-2407** | **CO 1** | Utilize Math functions, Strings, List, Tuples and Dictionaries in Python |
| | | **CO 2** | Illustrate the different Decision Making statements and Functions |
| | | **CO 3** | Interpret Object oriented programming in Python |
| | | **CO 4** | Summarize different File handling operations |
| | | **CO 5** | Design GUI Applications in Python and evaluate different database operations |

**Botany**

| **Paper No.** | **Paper/Course Name**<br><br>**Couse Code** | **Cos** | **Semester-III** |
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| | | | *Student will be able to*: |
| V | Plant Anatomy<br><br>KBP-S-BOT-2305 | **CO 1** | A**nalyze**structure of plant cell wall. |
| | | **CO 2** | **Distinguish** and **classify** Meristematic tissue. |
| | | **CO 3** | **Find** out the Permanent tissue and Vascular bundles. |
| | | **CO 4** | **Analyze** Primary structure of plant body. |

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| | | **CO 5** | **Compare** the secondary structure of plant body. |
| | | **CO 6** | **Examine** different plant tissue system |
| VI | Embryology of Angiosperms<br>KBP-S-BOT-2306 | **CO 1** | **Analyze** typical structure of flower |
| | | **CO 2** | **Define** pollination and fertilization |
| | | **CO 3** | **Explain** the structure of embryo and endosperm. |
| | | **CO 4** | **Illustrate** the structure of seed. |
| | | | **Semester IV** |
| VII | Plant Physiology<br>KBP-S-BOT-2407 | **CO 1** | **Explain** concept of water absorption. |
| | | **CO 2** | **Explain** about the translocation of food |
| | | **CO 3** | **Illustrate** the process of Photosynthesis |
| | | **CO 4** | **Illustrate** the process of Respiration |
| | | **CO 5** | **Define**Photoperiodisam and Vernalisation |
| VIII | Plant Metabolism<br>KBP-S-BOT-2408 | **CO 1** | **Classify** the enzyme |
| | | **CO 2** | **Explain** the role of nitrogen metabolism |

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| | | **CO 3** | **Compare** a role of macro and microelements |
| | | **CO 4** | **Explain** idea about growth and plant growth regulator |
| | | **CO 5** | **Examine** the types of plant growths. |

**Chemistry**

| Paper No. | Paper/Course Name Couse Code | COs | Semester-III |
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| **V** | **Organic Chemistry KBP-S-CHE-2305** | | *Student will be able to*: |
| | | **CO 1** | Understand the basic concepts in spectroscopy and stereochemistry, structure elucidation, R and S- nomenclature. |
| | | **CO 2** | Solve the spectroscopic problems based on given data. |
| | | **CO 3** | Explain the rearrangement and its mechanism of organic reactions viz Pinacol-Pinacolone, Acylation, Fries Rearrangement reactions. |
| | | **CO 4** | Discuss the structure and reactivity of aldehydes, ketones, ethers, epoxides and carboxylic acids in organic reactions. |
| | | **CO 5** | Illustrate the use of oxidizing and reducing agent in organic reactions. |
| **VI** | **Inorganic Chemistry KBP-S-CHE-2306** | | *Student will be able to*: |
| | | **CO 1** | Explain the formation of coordinate compounds based on Werner's Theory. |
| | | **CO 2** | Predict the nomenclature of coordinate compounds. |
| | | **CO 3** | Classify the chelating agent based on chelating ligands. |
| | | **CO 4** | Explain the electronic configuration and general properties of d-block elements. |

| Paper No. | Paper/Course Name Couse Code | COs | Semester-IV |
|---|---|---|---|
| VII | **Physical Chemistry KBP-S-CHE-2407** | | *Student will be able to*: |
| | | **CO 1** | Understand the basic terms in electrochemistry like conductance, specific conductance, molecular conductance,equivalent conductance and specific resistance. |
| | | **CO 2** | Evaluate the Kohlrausch law and its applications in electrochemistry. |
| | | **CO 3** | Explain the concept of entropy, entropy changes -for reversible and irreversible process in isolated systems, ideal gas mixing of gases and physical transformations |
| | | **CO 4** | Elaborate the Third law of thermodynamics and its physical significance. |
| | | **CO 5** | Define the law of crystallography, space lattice, lattice sites, lattice planes and unit cellin solids- Weiss and Miller indices. |
| | | **CO 6** | Discuss the one component system with respect to water and sulphur. |
| | | **CO 7** | Solve numerical problems based on Bragg's equation. |
| VIII | **Analytical and Industrial Inorganic Chemistry KBP-S-CHE-2408** | | *Student will be able to*: |
| | | **CO 1** | Understand the important terms in volumetric analysis - titrant, titrand, std. solution, indictor, equivalence point, primary and secondary standard, and strength of solution. |
| | | **CO 2** | Explain the theory of Acid-Base indicator, neutralization curve and choice of indicator in Acid-Base Titration. |
| | | **CO 3** | Distinguish between digestion, Co-precipitation and Post Precipitation Process |
| | | **CO 4** | Discuss the principles and process of manufacture of heavy chemicals such as Ammonia and Sulphuric acid. |
| | | **CO 5** | Understand the terminology in Metallurgy and methods of extraction process of Ores. |

**Electronics**

| Paper No. | Paper/Course Name | COs | Semester-III |
|---|---|---|---|
| V | **Electronics Circuits** | | *At the end of course, a student will be able to:* |
| | | CO 1 | Understand working of rectifiers, filters and regulators. |
| | | CO 2 | Explain need of transistor biasing andcompare methods of transistor biasing. |
| | | CO 3 | Explain basic function of single stage, multistage and power Amplifiers. |
| | | CO 4 | Apply negative feedback in amplifiers. |
| | | CO 5 | Perform experiments with transistor oscillators. |
| VI | **Pulse and Switching Circuits** | | *At the end of course, a student will be able to:* |
| | | CO 1 | Compare clippersand clamper circuits. |
| | | CO 2 | Build UJT as relaxation oscillator. |
| | | CO 3 | Classify different types of Multivibrators. |
| | | CO 4 | Construct AstableMultivibrator for various applications. |
| | | CO 5 | Explain Multivibrator using IC 555 and Logic gates |
| **Paper No.** | **Paper/Course Name** | **COs** | **Semester-IV** |
| | | | *At the end of course, a student will be able to:* |

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| VII | **Operational Amplifier and Applications** | CO 1 | Classify types of differential amplifiers. |
| | | CO 2 | Solve problems related to Ad, Ac and CMRR. |
| | | CO 3 | Summarize characteristics of operational amplifier. |
| | | CO 4 | Perform experiments with operational amplifier. |
| | | CO 5 | Make use of operational amplifier in linear and non linear systems. |
| VIII | **Microprocessor and Microcontroller** | | *At the end of course, a student will be able to:* |
| | | CO 1 | Compare ADC with DAC circuits. |
| | | CO 2 | Explain the architecture of microprocessor. |
| | | CO 3 | Develop assembly language programs for 8085 microprocessor. |
| | | CO 4 | Compare microprocessor with microcontroller. |
| | | CO 5 | Develop assembly language programs for 8051 microcontroller. |

**Physics**

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-III** |
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| | | | *Students will be able to*: |
| **Paper-V** | **KBP-S-PHY-2305 : Heat and Thermodynamics** | CO 1 | Explain kinetic interpretation of temperature, Andrew's Expt., Curve and different types of thermometers. |
| | | CO 2 | Understand kinetic theory of gases and concept of transport phenomena. |
| | | CO3 | Discuss thermo-dynamical state, thermodynamic equilibrium, various thermodynamic processes. |
| | | CO 4 | Explain first, second and third laws of thermodynamics. |

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| | | CO 5 | Write Carnot's theorem, working of Carnot's engine. |
| | | CO 6 | Design Otto engine and diesel engine and Explain concept of entropy. |
| **Paper – VI** | **KBP-S-PHY-2306 : Waves, Oscillations and Sound** | CO 1 | Understand the SHM and its solution, superposition principle. |
| | | CO 2 | Analyse Lissajous figures and their uses. |
| | | CO3 | Classify travelling and standing waves on a string, plane waves and spherical waves. |
| | | CO 4 | Define transducers and their types |
| | | CO 5 | Explain concept of acoustic of buildings, Sabine's experimental work and reverberation time. |
| | | CO 6 | Gain the knowledge of Piezo-electric effect, detection of Ultrasonic Waves and their application. |
| | | | **Semester IV** |
| **Paper – VII** | **KBP-S-PHY-2407: Thermal Physics and Statistical Mechanics** | CO 1 | Study thermo dynamical functions. |
| | | CO 2 | Derive Maxwell's relations and Claussius- Chaperon Equation. |
| | | CO3 | Explain Black body radiation, Planck's law, Rayleigh-Jean's law, Stefan Boltzmann law and Wien's displacement law, Joule-Thompson effect and Maxwell Boltzmann Distribution law. |
| | | CO 4 | Define Phase Space, macro state, microstate, Ensembles. |
| **Paper - VIII** | **KBP-S-PHY-2408: Optics and Lasers** | CO 1 | Describe cardinal points, working of Searle's Goniometer, optical magnifications, relations between them, the idea of resolution, difference between resolving and magnifying powers. |
| | | CO 2 | Define division of amplitude, division of wave front, Fresnel diffraction, Fraunhofer diffraction, half period zones, zone plates. |
| | | CO3 | Discuss structure and types of optical fibres, principle and working of fibre optic communication system, fundamental phenomenon in laser, Einstein's coefficients, construction and working of some lasers and idea of Holography. |
| | | CO 4 | Gain the knowledge of double refraction, polarization, optical rotation , principle, construction and working of Polarimeter. |
| **P-2** | **Physics Practical Code: P-2 (Annually)** | CO 1 | Enhance measuring skills in practical. |
| | | CO 2 | Record readings with practical skills. |
| | | CO3 | Measure period of oscillations, frequency of a wave and acceleration due to gravity. |
| | | CO 4 | Determine thermal conductivity, temperature coefficient of resistance, thermo-emf and specific heat. |
| | | CO 5 | Calculate mechanical equivalent of heat, specific heat of solids/liquids. |
| | | CO 6 | Test the laws of probability distribution, black body radiation. |
| | | CO 7 | Obtain dispersive power, refractive index, resolving power of various materials, |

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| | | | wavelengths of different sources by various methods. |
| | | CO 8 | Estimate the cardinal points of an optical system. |

**Statistics**

| Paper No. | Paper/Course Name Couse Code | COs | Semester-III |
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| **V** | **Continuous Probability Distributions-I**<br><br>**(KBP-S-STA-2305)** | | *Student will be able to*: |
| | | **CO 1** | Learn the basic concepts of Statistics. |
| | | **CO 2** | Understand concept of continuous distributions with real life situations |
| | | **CO 3** | Learn uniform and exponential distributions |
| | | **CO 4** | Solve examples on Continuous distributions |
| | | **CO 5** | Identify Bivariate distributions |
| | | **CO 6** | Solve examples on Bivariate distributions |
| | | **CO 7** | Apply transformation of Univariate and Bivariate continuous r.v. |
| **VI** | **Statistical MethodsI**<br><br>**(KBP-S-STA-2306)** | **CO 1** | Interpret the Meaning and need of time seriesanalysis. |
| | | **CO 2** | Do Measurement oftrend. |
| | | **CO 3** | Understand the need of vital statistics and concept of mortality andfertility |
| | | **CO 4** | Demonstrate the examples onDemography |
| | | **CO 5** | Relate Binary Systems Reliability of binary System and AgeingProperties |

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| | | **CO 6** | Learn Order statistics for a random sample of size n from a continuousdistribution |
| | | **CO 7** | Illustrate the examples on orderstatistics |
| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-IV** |
| **VII** | **Continuous Probability Distributions-II**<br><br>**(KBP-S-STA-2307)** | | *Student will be able to*: |
| | | **CO 1** | Compare Gamma, Beta and NormalDistributions |
| | | **CO 2** | Compute mean, mode, variance, moments, cumulants for Gamma and BetaDistributions |
| | | **CO 3** | Classify properties of normalcurve |
| | | **CO 4** | Compute Distribution of $X^2$ |
| | | **CO 5** | Make use of bivariate Normal and Exact SamplingDistributions |
| | | **CO 6** | Understand Chi-Square distribution, Student's t- distribution, Snedecor'sFdistribution |
| | | **CO 7** | Know the relations among the differentdistributions |
| | | **CO 8** | Solve examples on bivariate NormalDistribution |
| **VIII** | **Statistical Methods-II**<br><br>**(KBP-S-STA-2308)** | **CO 1** | Explain Testing ofHypothesis |
| | | **CO 2** | Make use of large SampleTests |
| | | **CO 3** | Develop small SampleTests |
| | | **CO 4** | Learn Meaning and purpose ofS.Q.C |
| | | **CO 5** | Draw Control charts forAttributes |
| | | **CO 6** | Draw Control charts forvariables |

| | | | |
|---|---|---|---|
| | | **CO 7** | Utilize Chebychev's inequality for discrete and continuousdistributions |
| | | **CO 8** | Solve examples on Chebychev'sinequality |

**Zoology**

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester** |
|---|---|---|---|
| | | | *Leaner will be able to ..* |
| | **B.Sc.II** | | **Semester-I/III/V** |
| 05 | **Animal Diversity-II** | **CO5** | Identify, Classify and describe the salient features of protochordates and agnathans |
| | | | Identify and Classify Pisces up to order level |
| | | | Identify and differentiate poisonous and non-poisonous snakes. |
| | | | Understand the concept of adaptation in animals and Describe how aves are adapted to aerial mode of life. |
| 06 | **Biochemistry** | **CO 6** | Explain the types of nucleic acids with their structure and function |
| | | | Understand classification of Carbohydrate and Describe the carbohydrate metabolism |
| | | | Understand classification of Protein and Describe Transamination, Deamination, Urea Cycle and biological significance of protein |
| | | | Nomenclature, Classification and Mechanism of Enzyme kinetics |
| | | | Understand the basic concept of population ecology. Estimate the carrying capacity of any habitat. Utilize the basic knowledge of wildlife in Ecotourism. With this, Learner would also explain the concept of ecological persistence and |

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| | | | perturbation. Develop new strategies for management of protected areas. |
| | | | |
| | **B.Sc.II** | | **Semester II/IV/VI** |
| 07 | **Reproductive Biology** | **CO 7** | Understand the concept of reproduction and explain the male and female reproductive system |
| | | | Understand concept of reproductive health and its significance. Apply the knowledge of assisted reproduction technology |
| 08 | **Applied Zoology- I** | **CO 8** | Understand the concept of host and parasitism. Describe the association between hots and parasites |
| | | | Acquire knowledge about incidence, distribution, and possible control of diseases and other factors relating to health.Apply this study to the control of health problems. |
| | | | Understand the concept of Pests. Identify the agricultural pests, explain biology and apply and implement appropriate control and preventive measures. |
| | | | Understand concepts of animal husbandry. Apply this knowledge in to Poultry farm and dairy farm management. |
| | | | |

**Mathematics**

| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-III** |
|---|---|---|---|
| **V** | **Real Analysis-I KBP-S-MAT-2305** | | *Student will be able to*: |
| | | **CO 1** | work within an axiomatic framework |
| | | **CO 2** | study convergence of monotone sequence and completeness property of $\mathbb{R}$ and explain the steps in standard Mathematical notations |
| | | **CO 3** | get knowledge of some simple techniques for testing the convergence of sequences confidence in applying them; |
| | | **CO 4** | understand logical arguments and have a better understanding of sets, functions and |

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| | | | relations |

| Paper No. | Paper/Course Name Course Code | COs | Semester-III |
|---|---|---|---|
| VI | Algebra-I KBP-S-MAT-2306 | | *Student will be able to*: |
| | | **CO 1** | solve the system of equations using the language of Matrices |
| | | **CO 2** | understand the elementary concepts of Matrices, System of a linear Equations, Greatest common divisor and least common multiple, Partial order relation and basic structure of Group |
| | | **CO 3** | classify numbers by using their prime factorization. |
| | | **CO 4** | improve the ability of Mathematical Thinking and reasoning after Matrices and basic properties of integers. |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-IV** |
| VII | Real Analysis-II KBP-S-MAT-2407 | | *Student will be able to*: |
| | | **CO 1** | use Cauchy's Criterion for the convergence of sequence and series follow from the completeness property of $\mathbb{R}$ |
| | | **CO 2** | achieve techniques for testing the convergence of sequences and series. |
| | | **CO 3** | construct sequences and series converging to expected points. |
| | | **CO 4** | express elementary functions in the form of power series. |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-IV** |
| VIII | Algebra-II KBP-S-MAT-2408 | | *Student will be able to*: |
| | | **CO 1** | understand types of subgroups and how to identify them |
| | | **CO 2** | define Subgroups, Normal subgroup, Cyclic Subgroups, Homomorphism and Permutation Group |
| | | **CO 3** | apply Euler's theorem and Fermat's theorem for basic study of divisibility in integers. |
| | | **CO 4** | develop idea to classify finite groups by using Lagrange's theorem. |
| | | **CO 5** | use isomorphism theorems for the detail study of complicated groups |
| | | **CO 6** | get an idea to study any group in terms of permutation group by using Cayley's theorem. |

B.VOC.-II

| Paper No. | Paper/Course Name<br>Couse Code | COs | Semester-V and VI |
|---|---|---|---|
| | | | *Student will be able to*: |
| **XVII** | **Food hygiene and sanitation** | **CO 1** | Demonstrate good personal hygiene and safe food handling procedures |
| | | **CO 2** | Discuss Occupational Safety and Health Administration requirements and effective workplace safety programs |
| | | **CO 3** | Identify causes of and prevention procedures for food-borne illness. |
| **II** | **Food microbiology** | **CO 1** | Explain the factors that affect microbial growth in food |
| | | **CO 2** | Discuss microbial spoilage of food |
| | | **CO 3** | Identify the importance and properties of indicator organisms |
| | | **CO 4** | Discuss the processing of cereals and pulses. |
| **III** | **Food packaging** | **CO 1** | Explain various types of packaging material |
| | | **CO 2** | Explain properties used in packaging of food product |
| | | **CO 3** | Check quality parameters of packaging material |
| **IV** | **Extrusion technology** | **CO 1** | identify different part of extruder |
| | | **CO 2** | Demonstrate the factors affecting extrusion cooking |
| | | **CO 3** | Demonstrate packaging of cereal based extruded product |
| | | **CO 4** | Prepare or develop extruded product |
| **Semester-VI** | | | |
| **VIII** | **IN- Plant Training** | **CO 1** | Demonstrate the application of knowledge and skill sets acquired from the course and workplace in the assigned job function |

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|---|---|---|---|
| | | **CO 2** | Solve real life challenges in the workplace by analysing work environment and conditions, and selecting appropriate skill sets acquired from the course |
| | | **CO 3** | Communicate and collaborate effectively and appropriately with different professionals in the work environment through written and oral means |
| | | **CO4** | Recommend ideas to improve work effectiveness and efficiency by analysing challenges and considering viable options |

**B,Sc, E.C.S. -II**

| **Paper Code** | **Paper/Course Name Couse Code** | **COs** | **Semester-III** |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-2319,2320** | **Data Structure using C++ – I,II** | **CO 1** | Understand the concept of Dynamic memory management,data types, algorithms. |
| | | **CO 2** | Understand basic data structures such as arrays, linked lists,stacks and queues. |
| | | **CO 3** | Solve problem involving graphs, trees and heaps. |
| | | **CO 4** | Apply Algorithm for solving problems like sorting,searching, insertion and deletion of data. |
| | | **CO 5** | Ability to describe stack,queue and linked list operation |
| **KBP-S-ECS-2321** | **Software Engineering** | **CO 1** | Learn the phases of software development |
| | | **CO 2** | Understand the fundamental concepts of softwaremodel, design and testing |
| | | **CO 3** | Distinguish the system engineering modelling Approaches. |
| | | **CO 4** | Gather, understand, analyze and specify requirements |
| | | **CO 5** | Develop architectural diagram, and implement by following coding principles. |
| **KBP-S-ECS-2322** | **Software Testing** | **CO 1** | List a range of different software testing techniques and statergies and be able to apply specific(automated) unit testing method to the projects. |
| | | **CO 2** | Distinguish characterstics of structural testing methods. |
| | | **CO 3** | Demonstrate the integration testing which aims to uncover interaction and compatibility problems as early as possible. |
| | | **CO 4** | Discuss about the functional and system testing methods. |
| | | **CO 5** | Demonstrate various issues for object oriented testing |

| Paper Code | Paper/Course Name Couse Code | COs | Semester-III |
|---|---|---|---|
| | | | *Student will be able to*: |
| KBP-S-ECS-2323 | Probability Theory –I | CO 1 | ability to distinguish between random and non-random experiments. |
| | | CO 2 | knowledge to conceptualise the probabilities of events including frequentist and axiomatic approach.Simultaneously, they will learn the notion of conditional probability including the concept of Bayes' Theorem |
| | | CO 3 | knowledge related to concept of discrete random variable and its probability distribution including expectation and moments. |
| | | CO 4 | knowledge of important discrete distributions such as Binomial, Poisson, Geometric, Negative Binomial and Hypergeometric and their interrelations if any, |
| | | CO 5 | Acumen to apply standard discrete probability distribution to different situations |
| KBP-S-ECS-2324 | Statistics for Data Science | CO 1 | know about correlation and regression techniques, thetwo very powerful tools in statistics. |
| | | CO 2 | get an idea of Linear, Polynomial and Multiple Linear regression. |
| | | CO 3 | learn about regression diagnostics, multicollinearity, residual plots and estimation and tests for regression coefficients. |
| | | CO 4 | study concept of coefficient of determination and inference on partial and multiple correlation coefficients. |
| | | CO 5 | Analyze statistical data graphically using frequency distributions and cummulative frequency distributions. |
| KBP-S-ECS-2325 | Introduction to Python programming | CO 1 | Familiar with Python environment, data types, operators used in Python. |
| | | CO 2 | Compare and contrast Python with other programming languages. |
| | | CO 3 | Learn the use of control structures and numerous native data types with their methods. |
| | | CO 4 | Design user defined functions, modules, and package |
| | | CO 5 | to design and program Python applications |
| **Paper Code** | **Paper/Course Name Couse Code** | **COs** | **Semester-IV** |
| | | | *Student will be able to*: |

| | | | |
|---|---|---|---|
| **KBP-S-ECS-2326** | **Database Management System** | **CO 1** | Understand the features of database management systems and Relational database. |
| | | **CO 2** | Design conceptual models of a database using ER modeling for real life applications and also construct queries in Relational Algebra. |
| | | **CO 3** | Understand the storage techniques and indexing Mechanism. |
| | | **CO 4** | Analyze the existing design of a database schema and apply concepts of normalization to design an optimal database. |
| | | **CO 5** | Retrieve any type of information from a data base by formulating complex queries in SQL. |
| **KBP-S-ECS-2327** | **Mysql** | **CO 1** | Understand basic concepts of how a database stores information via tables. |
| | | **CO 2** | Understanding of SQL syntax used with MySQL |
| | | **CO 3** | Learn how to retrieve and manipulate data from one or more tables. |
| | | **CO 4** | Know how to filter data based upon multiple conditions. |
| | | **CO 5** | Updating and inserting data into existing tables |
| **KBP-S-ECS-2328** | **Operating System** | **CO 1** | Understand the important computer system resourcesand the role of operating system in their managementpolicies and algorithms. |
| | | **CO 2** | Understand the process management policies and scheduling of processes by CPU. |
| | | **CO 3** | Evaluate the requirement for process synchronizationand coordination handled by operating system. |
| | | **CO 4** | Analyze the memory management and its allocation policies. |
| | | **CO 5** | Identify the storage management policies with respect to different storage management technologies. |
| **KBP-S-ECS-2329** | **Linux OS and Shell Scripting** | **CO 1** | Use command substitution to capture program output. |
| | | **CO 2** | Use conditional statements to control the execution of shell scripts. |
| | | **CO 3** | Write shell scripts to perform repetitive tasks using while and for loops. |
| | | **CO 4** | Design and implement shell functions. |
| | | **CO 5** | Identify and process command-line arguments. |

| **Paper Code** | **Paper/Course Name Couse Code** | **COs** | **Semester-IV** |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-** | | **CO 1** | knowledge about some probability inequalities, law of large numbers, Central Limit |

| | | | |
|---|---|---|---|
| **ECS-2330** | **Probability Theory-II** | | Theorem etc., |
| | | **CO 2** | ability to handle transformed random variables and derive associated distributions, |
| | | **CO 3** | .knowledge of important continuous distributions such as Uniform, Normal, Exponential and Gamma and relations with some other distributions, |
| | | **CO 4** | ability to use and interpret Normal probability and q-q plots for testing Normality of data, |
| | | **CO 5** | knowledge about Box Mueller transformation for simulations. |
| **KBP-S-ECS-2331** | **Optimization Techniques** | **CO 1** | Identify the need of Operations Techniques in problem solving |
| | | **CO 2** | Understand the advantages and limitations of optimization techniques. |
| | | **CO 3** | Use the knowledge of operations Techniques to Solve problems like linear programming problem (LPP),transportationproblem,assignment, and sequencing problems. |
| | | **CO 4** | Understand different application areas of operations Techniques. |
| | | **CO 5** | Ability to apply the theory of optimization methods and algorithms to develop and forsolving various types of optimization problems |
| **KBP-S-ECS-2332** | **Programming with Python** | **CO 1** | Articulate the Object-Oriented Programming concepts such as encapsulation, inheritance and polymorphism as used in Python |
| | | **CO 2** | Design and implement GUI application and how to handle exceptions and files |
| | | **CO 3** | Design and implement a program to solve a real world problem |
| | | **CO 4** | Make database connectivity in python programming language. |
| | | **CO 5** | learn data analytics through python programming |
| **KBP-S-ECS-Lab-P-VI** | **Data Structure using C++ -I,II , DBMS,Mysql and Introduction to Python** | **CO 1** | Manipulate various operations on arrays |
| | | **CO 2** | Perform various sorting and searching techniques on setof given values |
| | | **CO 3** | Understand the operations of Stack and Queue |
| | | **CO 4** | Know about the basic concepts of Link-list. |
| | | **CO 5** | .Demonstrate an understanding of the relational data model. |
| | | **CO 6** | Transform an information model into a relational database schema and to use a data definition languageand/or utilities to implement the schema using a DBMS |
| | | **CO 7** | Formulate, using relational algebra, solutions to a broad range of query problems |
| | | **CO 8** | to design and program Python applications |
| **Paper** | **Paper/Course Name** | **COs** | **Semester-IV** |

| Code | Couse Code | | |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-Lab-P-VII** | **Software Engineering,Software Testing ,Operating System , Linux OS and Shell scripting & Python Programming** | **CO 1** | . to know the requirements of developing software andaware of various models required for software development. |
| | | **CO 2** | understand the concepts of software testing fundamentals and types of testing. |
| | | **CO 3** | a deep insight about Linux file systems,VI editor and C shell. |
| | | **CO 4** | implements functional and system testing methods. |
| | | **CO 5** | Develop architectural diagram, and implement by following coding principles. |
| | | **CO 6** | solve software development case study |
| | | **CO 7** | Make database connectivity in python programming language. |
| | | **CO 8** | On successful completion of this course the studentsare able to develop programs using regularexpressions and GUI application,Web application. |
| **KBP-S-ECS-Lab-P-VIII** | **Probability Theory – I,II , Statistics for Data Science, Optimization Techniques** | **CO 1** | draw different types of control charts for variables and attributes. They will also be ab understand the practical applicability of single and double sampling inspection plans. |
| | | **CO 2** | use and apply regression techniques, obtain UMP tests and demonstrate knowledge of numerical methods. |
| | | **CO 3** | practical knowledge to the students on various topics elaborated in these two courses so that they can apply the relevant concepts to real life problems. |
| | | **CO 4** | Relate key concepts and applications of various optimization techniques |

Rayat Shikshan Sanstha's

**KARMAVEER BHAURAO PATIL MAHAVIDYALAYA, PANDHARPUR**

## (Autonomous)

**Department of B.Sc(ECS)**

**B.Sc(ECS) -II**

**Course Outcomes (COs)**

| Paper Code | Paper/Course Name Couse Code | COs | Semester - III |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-2319,2320** | **Data Structure using C++ – I,II** | **CO 1** | Understand the concept of Dynamic memory management,data types, algorithms. |
| | | **CO 2** | Understand basic data structures such as arrays, linked lists,stacks and queues. |
| | | **CO 3** | Solve problem involving graphs, trees and heaps. |
| | | **CO 4** | Apply Algorithm for solving problems like sorting,searching, insertion and deletion of data. |
| | | **CO 5** | Ability to describe stack,queue and linked list operation |
| **KBP-S-ECS-2321** | **Software Engineering** | **CO 1** | Learn the phases of software development |
| | | **CO 2** | Understand the fundamental concepts of software model, design and testing |
| | | **CO 3** | Distinguish the system engineering modelling Approaches. |
| | | **CO 4** | Gather, understand, analyze and specify requirements |
| | | **CO 5** | Develop architectural diagram, and implement by following coding principles. |
| **KBP-S-ECS-2322** | **Software Testing** | **CO 1** | List a range of different software testing techniques and statergies and be able to apply specific(automated) unit testing method to the projects. |
| | | **CO 2** | Distinguish characterstics of structural testing methods. |
| | | **CO 3** | Demonstrate the integration testing which aims to uncover interaction and compatibility problems as early as possible. |
| | | **CO 4** | Discuss about the functional and system testing methods. |
| | | **CO 5** | Demonstrate various issues for object oriented testing |

| Paper Code | Paper/Course Name Couse Code | COs | Semester - III |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-2323** | **Probability Theory –I** | **CO 1** | ability to distinguish between random and non-random experiments. |
| | | **CO 2** | knowledge to conceptualise the probabilities of events including frequentist and axiomatic approach.Simultaneously, they will learn the notion of conditional probability including the concept of Bayes' Theorem |
| | | **CO 3** | knowledge related to concept of discrete random variable and its probability distribution including expectation and moments. |
| | | **CO 4** | knowledge of important discrete distributions such as Binomial, Poisson, Geometric, Negative Binomial and Hypergeometric and their interrelations if any, |
| | | **CO 5** | Acumen to apply standard discrete probability distribution to different situations |
| **KBP-S-ECS-2324** | **Statistics for Data Science** | **CO 1** | know about correlation and regression techniques, the two very powerful tools in statistics. |
| | | **CO 2** | get an idea of Linear, Polynomial and Multiple Linear regression. |
| | | **CO 3** | learn about regression diagnostics, multicollinearity, residual plots and estimation and tests for regression coefficients. |
| | | **CO 4** | study concept of coefficient of determination and inference on partial and multiple correlation coefficients. |
| | | **CO 5** | Analyze statistical data graphically using frequency distributions and cummulative frequency distributions. |
| **KBP-S-ECS-2325** | **Introduction to Python programming** | **CO 1** | Familiar with Python environment, data types, operators used in Python. |
| | | **CO 2** | Compare and contrast Python with other programming languages. |
| | | **CO 3** | Learn the use of control structures and numerous native data types with their methods. |
| | | **CO 4** | Design user defined functions, modules, and package |
| | | **CO 5** | to design and program Python applications |

| Paper Code | Paper/Course Name Couse Code | COs | Semester - IV |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-2326** | **Database Management System** | **CO 1** | Understand the features of database management systems and Relational database. |
| | | **CO 2** | Design conceptual models of a database using ER modeling for real life applications and also construct queries in Relational Algebra. |
| | | **CO 3** | Understand the storage techniques and indexing Mechanism. |
| | | **CO 4** | Analyze the existing design of a database schema and apply concepts of normalization to design an optimal database. |
| | | **CO 5** | Retrieve any type of information from a data base by formulating complex queries in SQL. |
| **KBP-S-ECS-2327** | **Mysql** | **CO 1** | Understand basic concepts of how a database stores information via tables. |
| | | **CO 2** | Understanding of SQL syntax used with MySQL |
| | | **CO 3** | Learn how to retrieve and manipulate data from one or more tables. |
| | | **CO 4** | Know how to filter data based upon multiple conditions. |

| | | | |
|---|---|---|---|
| | | **CO 5** | Updating and inserting data into existing tables |
| **KBP-S-ECS-2328** | **Operating System** | **CO 1** | Understand the important computer system resources and the role of operating system in their management policies and algorithms. |
| | | **CO 2** | Understand the process management policies and scheduling of processes by CPU. |
| | | **CO 3** | Evaluate the requirement for process synchronization and coordination handled by operating system. |
| | | **CO 4** | Analyze the memory management and its allocation policies. |
| | | **CO 5** | Identify the storage management policies with respect to different storage management technologies. |
| **KBP-S-ECS-2329** | **Linux OS and Shell Scripting** | **CO 1** | Use command substitution to capture program output. |
| | | **CO 2** | Use conditional statements to control the execution of shell scripts. |
| | | **CO 3** | Write shell scripts to perform repetitive tasks using while and for loops. |
| | | **CO 4** | Design and implement shell functions. |
| | | **CO 5** | Identify and process command-line arguments. |

| **Paper Code** | **Paper/Course Name Couse Code** | **COs** | **Semester - IV** |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-2330** | **Probability Theory-II** | **CO 1** | knowledge about some probability inequalities, law of large numbers, Central Limit Theorem etc., |
| | | **CO 2** | ability to handle transformed random variables and derive associated distributions, |
| | | **CO 3** | .knowledge of important continuous distributions such as Uniform, Normal, Exponential and Gamma and relations with some other distributions, |
| | | **CO 4** | ability to use and interpret Normal probability and q-q plots for testing Normality of data, |

| | | | |
|---|---|---|---|
| | | **CO 5** | knowledge about Box Mueller transformation for simulations. |
| **KBP-S-ECS-2331** | **Optimization Techniques** | **CO 1** | Identify the need of Operations Techniques in problem solving |
| | | **CO 2** | Understand the advantages and limitations of optimization techniques. |
| | | **CO 3** | Use the knowledge of operations Techniques to Solve problems like linear programming problem (LPP),transportation problem,assignment, and sequencing problems. |
| | | **CO 4** | Understand different application areas of operations Techniques. |
| | | **CO 5** | Ability to apply the theory of optimization methods and algorithms to develop and for solving various types of optimization problems |
| **KBP-S-ECS-2332** | **Programming with Python** | **CO 1** | Articulate the Object-Oriented Programming concepts such as encapsulation, inheritance and polymorphism as used in Python |
| | | **CO 2** | Design and implement GUI application and how to handle exceptions and files |
| | | **CO 3** | Design and implement a program to solve a real world problem |
| | | **CO 4** | Make database connectivity in python programming language. |
| | | **CO 5** | learn data analytics through python programming |
| **KBP-S-ECS-Lab-P-VI** | **Data Structure using C++ -I,II , DBMS,Mysql and Introduction to Python** | **CO 1** | Manipulate various operations on arrays |
| | | **CO 2** | Perform various sorting and searching techniques on set of given values |
| | | **CO 3** | Understand the operations of Stack and Queue |
| | | **CO 4** | Know about the basic concepts of Link-list. |
| | | **CO 5** | .Demonstrate an understanding of the relational data model. |
| | | **CO 6** | Transform an information model into a relational database schema and to use a data definition language and/or utilities to implement the schema using a DBMS |
| | | **CO 7** | Formulate, using relational algebra, solutions to a broad range of query problems |
| | | **CO 8** | to design and program Python applications |

| **Paper Code** | **Paper/Course Name Couse Code** | **COs** | **Semester - IV** |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-** | **Software** | **CO 1** | . to know the requirements of developing software and aware of various models required for software development. |

| | | | |
|---|---|---|---|
| **Lab-P-VII** | **Engineering,Software Testing ,Operating System , Linux OS and Shell scripting & Python Programming** | **CO 2** | understand the concepts of software testing fundamentals and types of testing. |
| | | **CO 3** | a deep insight about Linux file systems,VI editor and C shell. |
| | | **CO 4** | implements functional and system testing methods. |
| | | **CO 5** | Develop architectural diagram, and implement by following coding principles. |
| | | **CO 6** | solve software development case study |
| | | **CO 7** | Make database connectivity in python programming language. |
| | | **CO 8** | On successful completion of this course the students are able to develop programs using regular expressions and GUI application,Web application. |
| **KBP-S-ECS-Lab-P-VIII** | **Probability Theory – I,II , Statistics for Data Science, Optimization Techniques** | **CO 1** | draw different types of control charts for variables and attributes. They will also be ab understand the practical applicability of single and double sampling inspection plans. |
| | | **CO 2** | use and apply regression techniques, obtain UMP tests and demonstrate knowledge of numerical methods. |
| | | **CO 3** | practical knowledge to the students on various topics elaborated in these two courses so that they can apply the relevant concepts to real life problems. |
| | | **CO 4** | Relate key concepts and applications of various optimization techniques |

Rayat Shikshan Sanstha's

**KARMAVEER BHAURAO PATIL MAHAVIDYALAYA,PANDHARPUR**

## (Autonomous)

**Department of Food Processing and Management**

**B.Voc**

**Course Outcomes (COs)**

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-III** |
|---|---|---|---|

| | | | |
|---|---|---|---|
| | | | *Student will be able to*: |
| **X** | **Fundamentals of Financial Accounting** | **CO 1** | This subject imports the knowledge of accounting and its management. |
| | | **CO 2** | Students got knowledge of debit notes, credit notes, paying slips, cash vouchers etc. |
| | | **CO 3** | As well as it covers general entries and ledger accounts, computerized accounting system |
| **XI** | **Milk & Milk Products** | **CO 1** | Train students to scientifically undertake all operations of dairy technology and to create employment protentional and man power for dairy development. |
| | | **CO 2** | To create entrepreneur in milk and milk products. |
| | | **CO 3** | To develop organizational capabilities among our youth in milk and milk products industry. |
| | | **CO 4** | To develop skill, instill confidence by enhancing life skill |
| **XII** | **Food Quality & Waste Management** | **CO 1** | Develop a HACCP plans for different food industry. |
| | | **CO 2** | Understanding knowledge of HACCP certification |
| | | **CO 3** | Understanding laws and regulations governing food safety principals like FSMS, FSSAI |
| **XIII** | **Fundamentals of Food Nutrition** | **CO 1** | Better understanding in physiological and metabolic functions of nutrients. |
| | | **CO 2** | Formalize nutritional assessment RDA and dietary reconditions and guidelines. |

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| | | **CO 3** | Understanding and determination of BMR and body surface area |
| | | **CO 4** | Understanding of food composition and energy balance in dietary planning |
| **XIV** | **Business Management** | **CO 1** | To get knowledge about management and is characteristics, significance and functions. |
| | | **CO 2** | To get knowledge of planning of processing, man power handling, marketing of food industry. |
| | | **CO 3** | To get knowledge of organization and controlling of employees. |
| **XV** | **Legal Frame Work for Food Industry** | **CO 1** | Able to understand about food laws and different types of food agencies. |
| | | **CO 2** | Students will get knowledge about food standardizing institutes. |
| | | **CO 3** | Gain knowledge on the method of detection of adulteration in food |
| **XVI** | **Meat, Fish & Poultry Processing** | **CO 1** | Able to understand about processing of meat, poultry and fish processing. |
| | | **CO 2** | To get knowledge of nutritional profile of meat, fish and poultry products. |
| | | **CO 3** | To get knowledge on the method of grading of meat |
| **XVII** | **BeveragesTechnology** | **CO 1** | Better understanding in beverage processing. |
| | | **CO 2** | Familiarize with the processing of all types of drinks. |

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| | | **CO 3** | Understanding and determining basic knowledge of beverage industry in the way of equipment |

Rayat Shikshan Sanstha's

**KARMAVEER BHAURAO PATIL MAHAVIDYALAYA, PANDHARPUR**

## (Autonomous)

### Department of Food Processing and Management

### Programme Specific Outcomes (PSOs)

| Programme Name | PSOs | Programme Specific Outcomes |
|---|---|---|
| **B.VocFood Processing and Management** | | *Student will be able to*: |
| | **PSOs 1** | To impart the knowledge about various compounds such as protein, carbohydrates, lipids amino acids, minerals, vitamins etc associated with the chemical compositions of food, their structures and functions. |
| | **PSOs 2** | The students can gain knowledge about some very essential topic of nutrition and its metabolism balance inside the body. |
| | **PSOs 3** | To make the students familiar with the technologies of food processing and preservation of plant and animal foods, cereals, pulses, oilseeds, fruits vegetables, spices, meat, fish, poultry, sea food, milk and dairy products |

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| | **PSOs 4** | To development students' understanding and communication skills through various assignments which will enable them to develop skills in writing and effective's interpersonal skills. Presentations in different topics enhances their confidence, ability to express themselves & presentation skills |
| | **PSOs 5** | To gain knowledge about advanced technologies adapted in various food industries by physically visiting different food industries |

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**KARMAVEER BHAURAO PATIL MAHAVIDYALAYA, PANDHARPUR**

**(Autonomous)**

**Course Outcomes (COs)**

**BCA-III**

| Paper No. | Paper/Course Name Couse Code | COs | Semester-V<br>Students will be able to ----- |
|---|---|---|---|
| **1** | **Core Java KBP-S-BCA-3502** | **CO 1** | Apply object oriented programming concepts. |
| | | **CO 2** | Develop and utilize package and interfaces in a Java program. |
| | | **CO 3** | Utilize graphical user interface in Java programs. |
| | | **CO 4** | Create applets. |
| 2 | **Visual Programming KBP-S-BCA-3503** | **CO 1** | Construct knowledge of the structure and model of the programming language C # |
| | | **CO 2** | Make use of the programming language C # for various programming technologies |
| | | **CO 3** | Develop application in C # |
| | | **CO 4** | Propose the use of certain technologies by implementing them in the C # programming language to solve the given problem (synthesis) |
| 3 | **Recent Trends in IT KBP-S-BCA-3504** | **CO 1** | Compare the big data and hadoop. |
| | | **CO 2** | Explain the basic concepts of data science. |
| | | **CO 3** | Model Cloud cube. |
| | | **CO 4** | Make use of IOT. |
| 4 | **Computer Graphics KBP-S-BCA-3505** | **CO 1** | Explain the core concepts of computer graphics, including viewing, projection, perspective, modelling and transformation in two and three dimensions. |
| | | **CO 2** | Apply the concepts of colour models, lighting and shading models, textures, ray tracing, hidden surface elimination, anti-aliasing, and rendering. |
| | | **CO 3** | Explain the fundamentals of animation, parametric curves and surfaces, and spotlighting. |

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| | | **CO 4** | Identify a typical graphics pipeline and apply graphics programming techniques to design and create computer graphics. |
| 5 | **Linux and Shell Programming KBP-S-BCA-3506** | **CO 1** | Perceive the basic set of commands and utilities in Linux/UNIX systems. |
| | | **CO 2** | Discover software for Linux/UNIX systems. |
| | | **CO 3** | Determine the important Linux/UNIX library functions and system calls. |
| | | **CO 4** | Discuss the inner workings of UNIX-like operating systems. |
| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-VI** |
| | | | *Student will be able to*: |
| **1** | **Advanced Java KBP-S-BCA-3602** | **CO 1** | Create dynamic web pages, using Servlets and JSP. |
| | | **CO 2** | Make a resusable software component, using Java Bean. |
| | | **CO 3** | Develop Stateful, Stateless and Entity Beans |
| | | **CO 4** | Design Java classes and object associations to relational database tables with Hibernate mapping files |
| 2 | **Dot Net Technology KBP-S-BCA-3603** | **CO 1** | Perceive the Microsoft .NET Framework and ASP.NET page structure |
| | | **CO 2** | Design web application with variety of controls |
| | | **CO 3** | Utilize Microsoft ADO.NET to access data in web Application |
| | | **CO 4** | Develop secured web application |
| 3 | **Data Warehouse & Data Mining KBP-S-BCA-3604** | **CO 1** | Identify the key processes of data mining, data warehousing and knowledge discovery process. |
| | | **CO 2** | Perceive the basic principles and algorithms used in practical data mining and their strengths and weaknesses. |
| | | **CO 3** | Apply data mining techniques to solve problems in other disciplines in a mathematical way. |
| 4 | **Cryptography & Network** | **CO 1** | Apply various public key cryptography techniques |

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| | **Security KBP-S-BCA-3605** | **CO 2** | Apply Hashing and Digital Signature techniques |
| | | **CO 3** | Perceive the various Security Applications |
| | | **CO 4** | Apply system level security applications |
| 5 | **Advanced Python KBP-S-BCA-3606** | **CO 1** | Explain advanced principles of Python programming language |
| | | **CO 2** | Elaborate object oriented concepts |
| | | **CO 3** | Develop Web Application using Django |
| | | **CO 4** | Compare NumPY and SciPY |

**B.Sc. III-Botany**

| **Paper No.** | **Paper/Course Name Course Code** | **Cos** | **Semester-V** |
|---|---|---|---|
| | | | *Student will be able to*: |
| IX | Plant Systematic KBP-S-BOT 3509 | **CO 1** | **Define** descriptive terminologies of plant taxonomy |
| | | **CO 2** | E**xplain** the species concept, Identification and nomenclature |
| | | **CO 3** | **Make use of** herbarium and botanical gardens |
| | | **CO 4** | C**ompare** the different plant classification systems |
| | | **CO 5** | **Evaluate** the different Angiospermic families |
| X | Genetics KBP-S-BOT 3510 | **CO 1** | Create an interest about genes heredity and variations in plants |
| | | **CO2** | **Estimate** linkage map and distinguish between linkage and crossing over |
| | | **CO3** | **Predic**t the sex of an organism by using different mechanisms in plants and animals |

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| | | **CO4** | **Classify** the chromosomal aberrations based on the structural and numerical changes in chromosomes. |
| | | C**O5** | **Explain** and solve the examples based on Plastid and mitochondrial inheritance |
| XI | Molecular Biology KBP-S-BOT 3511 | **CO1** | **Define** molecular biology |
| | | **CO2** | **Analyse** the structure of DNA and RNA |
| | | **CO3** | **Evaluate** the experiment establishing central dogma |
| | | **CO4** | **Explain** the process of transcription |
| | | **CO5** | **Importance** process of translation |
| XII | Economic Botany KBP-S-BOT3512 | **CO1** | **Identify** legume plants |
| | | **CO2** | **Estimate** fiber yielding plants |
| | | **CO3** | **Analyze** dye yielding plants |
| | | **CO4** | **Elaborate** drug yielding plants |
| | | **CO5** | **To make** use as natural products |
| | | **CO6** | **Identify** the ornamental plants |
| | | **CO7** | **Estimate** the perfumes and cosmetic plants |
| XIII | Plant Pathology KBP-S-BOT 3613 | **CO1** | **Elaborate** the concept of disease and terminologies regarding to the plant pathology |
| | | **CO2** | **Identify** the plant diseases |
| | | **CO3** | **Estimate** the losses due to the diseases |
| | | **CO4** | **Analyze** the pathogen symptoms and control measures of particular diseases |
| | | **CO5** | **Classify** the plant diseases |
| XIV | Plant Biotechnology KBP-S-BOT 3614 | **CO1** | **Define** recombinant DNA technology and Analyze Principals and techniques |
| | | **CO2** | **Apply** the different methods of gene transfer |

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| | | **CO3** | **Explain** germplasm conservation and cryopreservation |
| | | **CO4** | **Plan** the tissue culture technique by using different culture methods |
| | | **CO5** | **Apply** the techniques of biotechnology in different fields |
| XV | Cell Biology<br>KBP-S-BOT 3615 | **CO1** | **Identify** the different microscopic techniques in biology**.** |
| | | **CO2** | **Discover** cell theory of life**.** |
| | | **CO3** | **Discuss** the different plant cell organelles**.** |
| | | **CO4** | **Distinguish** the plant nucleus and chromosome**.** |
| | | **CO5** | **Examine** the plant cell division**.** |
| XVI | Biostatics<br>KBP-S-BOT 3615 | **CO1** | **Define** Biostatics and illustrate the basic principle statistical method and variables |
| | | **CO2** | **Compare** primary and secondary data. |
| | | **CO3** | **Test** and solve the statistical problems |
| | | **CO4** | **Find** probability and utilize the basic concept |
| | | **CO5** | **Choose** the test for significance during solving statistical examples |

**Chemistry**

| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-V** |
|---|---|---|---|
| **IX** | **Physical Chemistry KBP-S-CHE-3509** | | *Student will be able to* : |
| | | **CO 1** | Construct different types of cells. |
| | | **CO 2** | Compare difference between thermal and photochemical process |
| | | **CO 3** | Explain different concepts associate with nuclear chemistry. |
| | | **CO 4** | Prove Schrodinger wave equations. |
| | | | *Student will be able to* : |
| | | **CO 1** | Explain basic concept of CFT and formation of complexes with crystal field splitting of ‘d’ orbital. |

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| **X** | **Inorganic Chemistry KBP-S-CHE-3510** | | Construct molecular orbital energy diagram for hypothetical octahedral complex. |
| | | **CO 2** | Classify different types of nuclear reactions. |
| | | **CO 3** | Explain the function of metalloporphyrines with reference to haemoglobin and myoglobin. |
| | | **CO 4** | Classify catalytic reactions and understand catalytic reactions. |
| | | **CO 5** | Summarize the nutrient functions in plant growth. |
| **XI** | **Organic Chemistry KBP-S-CHE-3511** | | *Student will be able to* : |
| | | **CO 1** | Build the structure of chemical compounds on the basis of spectroscopic data. |
| | | **CO 2** | Evaluate the stability associated with the given stereoisomer's. |
| | | **CO 3** | Predict the mechanism of the various name reactions. |
| | | **CO 4** | Choose appropriate reagent for various organic transformations. |
| **XII** | **Analytical and Industrial Physical Chemistry KBP-S-CHE-3512** | | *Student will be able to* : |
| | | **CO 1** | Discuss theory of colorimetry and study of various electrodes and their uses in determination of pH. |
| | | **CO 2** | Construct plolarographic apparatus. |
| | | **CO 3** | Classify different type of burners in flame photometry |
| | | **CO 4** | Explain different concepts associate with conductometry and conductometric titrations |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-VI** |
| **XIII** | **Physical Chemistry KBP-S-CHE-3614** | | *Student will be able to* : |
| | | **CO 1** | Classify different type in physical spectroscopy. |
| | | **CO 2** | Compare ideal and non-ideal solutions. |
| | | **CO 3** | Evaluate free energy about Gibb's-Helmholtz equation. |
| | | **CO 4** | Explain fast reactions under different techniques. |
| **XIV** | **Inorganic Chemistry KBP-S-CHE-3615** | | *Student will be able to* : |
| | | **CO 1** | Summarize properties of lanthanides and actinides. |
| | | **CO 2** | Explain different theories of bonding in metal and types semiconductors |
| | | **CO 3** | Illustrate the structures of diborane, borazine, and compounds of xenon. |

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| | | **CO 4** | Explain electrochemical theory and factors affecting the corrosion. |
| | | **CO 5** | Interpret structure of alkyl and aryl compounds of Li, Be, Al. |
| **XV** | **OrganicChemistry KBP-S-CHE-3616** | | *Student will be able to* : |
| | | **CO 1** | Discuss the synthetic methods and properties of heterocyclic compounds. |
| | | **CO 2** | Explain classification and chemical properties of carbohydrates. |
| | | **CO 3** | Elaborate chemistry and uses of pharmaceuticals and agrochemicals. |
| | | **CO 4** | Explain the chemistry behind vitamins, hormones and dyes. |
| **XVI** | **Analytical and Industrial Organic Chemistry (DSE-1) KBP-S-CHE-3617** | | *Student will be able to* : |
| | | **CO 1** | Compare difference between soaps and detergents |
| | | **CO 2** | Distinguish between various classes of polymers and different types of polymerization |
| | | **CO 3** | Explain importance of sugar and alcohol industries. |
| | | **CO 4** | Classify the basic principles in chromatography and study the different types of chromatography. |
| | | **CO 5** | Explain different concepts associated with Chromatography |

**Electronics**

| **Paper No.** | **Paper/Course Name** | **COs** | **Semester-V** |
|---|---|---|---|
| IX | **Linear Integrated Circuits and Applications** | | *At the end of course, a student will be able to:* |
| | | CO 1 | Design oscillator circuits. |
| | | CO 2 | Explain fabrication process of integrated circuit. |
| | | CO 3 | List applications of PLL. |
| | | CO 4 | Classify different types of active filters. |
| | | CO 5 | Design regulated power supply. |

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| X | **Sensors and Transducers** | | *At the end of course, a student will be able to:* |
| | | CO 1 | Classify transducers. |
| | | CO 2 | Discuss working principleof Sensors & Transducers |
| | | CO 3 | Compare Resistive, Capacitive and Inductive transducers |
| | | CO 4 | List selection criteria for transducer. |
| | | CO 5 | Compare transducers and actuators |
| XI | **Electronics Communication** | | *At the end of course, a student will be able to:* |
| | | CO 1 | Classify communication systems. |
| | | CO 2 | Distinguish between modulation and demodulation techniques. |
| | | CO 3 | Compare transmitter and receiver circuits. |
| | | CO 4 | Explain working principle of Telephone System. |
| | | CO 5 | Discuss Radio wave Propagation. |
| XII (DSE-1) | **Embedded System Design** | | *At the end of course, a student will be able to:* |
| | | CO 1 | Explain the fundamentals of Embedded System Design. |
| | | CO 2 | Design programs in C. |
| | | CO 3 | Design programs in embedded C. |

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| | | CO 4 | Build hardware to interfacedifferent devices with 8051 microcontroller. |
| | | CO 5 | Develop various embedded systems. |
| XII (DSE-2) | **Industrial Automation and PLC Programming** | | *At the end of course, a student will be able to:* |
| | | CO 1 | Explain the fundamentals of Control System. |
| | | CO 2 | Classify control system. |
| | | CO 3 | List the components of control system. |
| | | CO 4 | Define programmable logic controller. |
| | | CO 5 | Explain the basics of ladder programming. |
| **Paper No.** | **Paper/Course Name** | **COs** | **Semester-VI** |
| XIII | **Power Electronics** | | *At the end of course, a student will be able to:* |
| | | CO 1 | List the power devices. |
| | | CO 2 | Explain the importance of Thyristor. |
| | | CO 3 | Analyze the controlled rectifiers. |
| | | CO 4 | Compare Inverters and choppers. |
| | | CO 5 | Explain the applications of power devices. |
| | | | *At the end of course, a student will be able to:* |
| | | CO 1 | Discuss the fundamental of signal conditioning. |

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| XIV | **Electronics Instrumentation** | CO 2 | Explain the importance of programmable gain amplifier. |
| | | CO 3 | Explain the concept of Data Acquisition System. |
| | | CO 4 | List the measuring instruments and recording devices. |
| | | CO 5 | Discuss the working principle of PH Meter, Conductivity Meter and Temperature Meter. |
| XV | **Modern Communication Systems** | | *At the end of course, a student will be able to:* |
| | | CO 1 | Tell importance of fiber optic communication. |
| | | CO 2 | Explain the details of satellite communication. |
| | | CO 3 | Discuss different circuits in mobile communication. |
| | | CO 4 | Explain the basics of microwave and RADAR communication. |
| | | CO 5 | Compare the network topologies used in computer communication. |
| XVI (DSE-1) | **Biomedical Electronics** | | *At the end of course, a student will be able to:* |
| | | CO 1 | Define bioelectric signals. |
| | | CO 2 | Compare working principles of ECG, EEG and EMG. |
| | | CO 3 | Explain thefundamentals of biomedical instrumentation systems. |
| | | CO 4 | Give importance of imaging systems used in biomedical. |
| | | CO 5 | List theapplications of biomedical instruments. |
| | | | *At the end of course, a student will be able to:* |

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| XVI (DSE-2) | **Virtual Instrumentation** | | |
| | | CO 1 | Explain the fundamentals of virtual instrumentation. |
| | | CO 2 | List the IDEs. |
| | | CO 3 | Discuss theFundamentals of LABVIEW. |
| | | CO 4 | Develop virtual instrumentation using LABVIEW. |
| | | CO 5 | Design various systems in LABVIEW. |

**Physics**

| Paper No. | Paper/Course Name Couse Code | COs | Semester-V |
|---|---|---|---|
| **Paper-IX** | **KBP-S-PHY-3509: Mathematical Physics & Statistical Physics** | CO 1 | Solve partial differential equations. |
| | | CO 2 | Understand applications of partial differential equations. |
| | | CO3 | Understand Curvilinear, Cartesian, Spherical-polar, Cylindrical coordinate systems. |
| | | CO 4 | Understand Beta and Gamma functions. |
| | | CO 5 | Understand complex number. |
| | | CO 6 | Understand Bose-Einstein & Fermi-Dirac Statistics. |
| **Paper -X** | **KBP-S-PHY-3510: Solid State Physics** | CO 1 | Define various types of solids depending on crystal structure |
| | | CO 2 | Know different methods for structural analysis of crystal |
| | | CO3 | Explain concept of energy bands in solid |
| | | CO 4 | Elucidate magnetic Materials and its types |
| | | CO 5 | Explain superconductivity phenomenon and its types |
| **Paper-XI** | **KBP-S-PHY-3511: Classical Mechanics, Relativity and Electrodynamics** | CO 1 | Define constraints, Degree of freedom and generalized coordinates etc., and understand principle of virtual work and D'Alembert's principle. |
| | | CO 2 | Derive Lagrange's equation from D'Alembert's principle and understand it's of Lagrange's equations. |
| | | CO 3 | Define Inertial and Non–Inertial reference frames, Understand Michelson Morley experiment; define Relativisticadditionofvelocities, Length contraction and Time dilation. Describe mass energy relation. |
| | | CO 4 | Define Poisons and Laplace equation and their physical significance and describe motion of charged particles in electric and magnetic fields. |
| | | CO 5 | Explain small oscillations on the basis of free oscillations. |

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| | | CO 6 | Define boundary conditions the laws of reflection and refractions. |
| **Paper – XII** | **DSE-1 A : Paper-XII: KBP-S-PHY-3512:Electronics** | CO 1 | Know importance of Op-Amp and its operations. |
| | | CO 2 | Make use of Timer (IC 555) in home appliances and industry. |
| | | CO3 | Elaborate the branch Power Electronics in manufacturing industrial applications. |
| | | CO 4 | Elucidate different types of Display Devices. |
| | | CO 5 | Design MOSFETs and their applications |
| | | | **Semester VI** |
| **Paper-XIII** | **KBP-S-PHY-3613: Quantum Mechanics** | CO 1 | Define concept of wave packet and Uncertainty principle. |
| | | CO 2 | Understand Schrodinger time dependent and time independent wave equations |
| | | CO3 | Solve the problems using Schrodingertime dependent and time independent wave equations |
| | | CO 4 | Understand the Matter waves. |
| | | CO 5 | Understand applications of Schrodinger equation. |
| | | CO 6 | Understand different operators and commutation relations. |
| **Paper - XIV** | **KBP-S-PHY-3614: Materials Science** | CO 1 | Explaining different materials and its properties. |
| | | CO 2 | Know criteria for selection of materials for its applications. |
| | | CO3 | Explain concept of polymer, ceramics and composite materials and its applications. |
| | | CO 4 | Elucidate Biomaterials and their mechanism |
| | | CO 5 | Understand Nano-materials and different synthesis process |
| **Paper-XV** | **KBP-S-PHY-3615: Atomic, Molecular Physics and Astrophysics** | CO 1 | Understand Vector atom model. |
| | | CO 2 | Understand atomic structure, atomic models and atomic spectra. |
| | | CO 3 | Understand fine structure and Zeeman effect. |
| | | CO 4 | Understand Rotational and Vibrational spectra, Raman Effect and Characteristic properties of Raman lines. |
| | | CO 5 | Understand Milky Way galaxy and origin of solar system. |
| | | CO 6 | Understand life cycle of stars. |
| **Paper – XVI** | **KBP-S-PHY-3616: Nuclear Physics** | CO 1 | Explain about the nuclear structure and its properties. |
| | | CO 2 | Understand the Q value of reaction and its calculation |

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| | | CO3 | Know about the detectors and accelerators. |
| | | CO 4 | Explain significance of various decays in the nuclear process. |
| | | CO 5 | Explain about the knowledge of particles. |
| | **KBP-S-PHY-36-SC: Add-on: Skill Enhancement Course: Thin Film Deposition and Characterization Techniques** | CO 1 | Create new innovative ideas of developing thin films materials for various energy storage applications. |
| | | CO 2 | Explain the different types of Characterization techniques. |
| | | CO3 | Organize their report using Microsoft word, power point and excel. |
| | | CO 4 | Describe the format of research paper in journals, conference template and publications process. |
| **P-3** | **Physics Practical Code: P-3 (Annually)** | CO 1 | Determination of Surface tension and Viscosity by various method. |
| | | CO 2 | Determinationof Resistivity and band gap of semiconducting material by four probe method. |
| | | CO3 | Determine Self Inductance by Owens method. |
| | | CO 4 | Determinate wavelength of sodium by various optical methods. |
| | | CO 5 | Determinate the resolving and dispersive power of prism and grating. |
| | | CO 6 | Understand the diffraction pattern by using various obstacles. |
| | | CO 7 | Determination of Beta particle range and maximum energy. |
| | | CO 8 | Understand the IV characteristics of photovoltaic cell, Efficiency of solar cell. |
| | | CO 9 | Understand the to create resume by MS word and worksheet of student mark sheet by MS Excel. |
| | | CO 10 | Determination of various Multivibrators using IC555 |
| | | CO 11 | Determination of OP-AMP as inverting amplifier and its applications. |
| | | CO 12 | Determination of Crystal structure by XRD and study of microstructure by SEM/TEM pattern. |

**Statistics**

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-V** |
|---|---|---|---|
| **IX** | **Probability** | | *Student will be able to*: |
| | | **CO 1** | **Verify**-Relation between among the distribution. |

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| | **Distributions**<br><br>**(KBP-S-STA-3509)** | **CO 2** | **Define –**Various Probability distributions. |
| | | **CO 3** | **Solve**-Examplesand problems on Laplace, lognormal and Cauchy distributions. |
| | | **CO 4** | **Evaluate-** Generating function of a standard discrete distributions. |
| | | **CO 5** | **Explain-** Concept of truncated distribution. |
| **X** | **Statistical Inference-I**<br><br>**(KBP-S-STA-3510)** | **CO 1** | **List-** different Estimator |
| | | **CO 2** | **Distinguish-**between Point and Interval Estimation |
| | | **CO 3** | **Compare-** Method of moments and MLE |
| | | **CO 4** | **Justify-**betterment of among the methods of estimation |
| **XI** | **Operations Research**<br><br>**(KBP-S-STA-3511)** | **CO 1** | **Determine-**Optimum solution using Linear Programming Problem. |
| | | **CO 2** | **Analyze-** Mathematical problem for decision problem and there systematic solution. |
| | | **CO 3** | **Discuss-**Possible problems in using operations research. |
| | | **CO 4** | **Construct-** Network diagram |
| **XII** | **Sampling Theory**<br><br>**(KBP-S-STA-3512)** | **CO 1** | **Create-** questionnaire for collecting data. |
| | | **CO 2** | **Compare-** Variability among various sampling methods. |
| | | **CO 3** | **Explain-** Circular systematic sampling. |
| | | **CO 4** | **Determine-** of the sample size under optimum allocation and Neyman's allocation |
| | | | **Semester-VI** |
| **XIII** | **Probability Theory**<br><br>**(KBP-S-STA-3613)** | | *Student will be able to*: |
| | | **CO 1** | **Proof-** Weak law of large number. |
| | | **CO 2** | **Construct-** transition probability matrix. |
| | | **CO 3** | **Classify-** the Markov chain. |
| | | **CO 4** | **Estimate-** Departure time of queuing system |
| **XIV** | | **CO 1** | **Distinguish-** between parametric and non-parametric test |

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| | **Statistical Inference-II**<br><br>**(KBP-S-STA-3614)** | **CO 2** | **Prove-**NP lemma for simple null hypothesis against alternative hypothesis. |
| | | **CO 3** | **Develop-** Likelihood ratio test. |
| | | **CO 4** | **Test-** the randomness using run test. |
| **XV** | **Industrial Statistics**<br><br>**(KBP-S-STA-3615)** | **CO 1** | **Construct-** EWMA Chart, CUSUM Chart and V-Mask CUSUM chart. |
| | | **CO 2** | **Explain-** the process of accepting sampling. |
| | | **CO 3** | **Discuss-** the two causes of process variation. |
| | | **CO 4** | **Describe-** categories of Process control. |
| | | **CO 5** | **Determine-** whether process is in control or out of control using CUSUM Chart. |
| **XVI** | **Designs of Experiments**<br><br>**(KBP-S-STA-3616)** | **CO 1** | **Design-** Layout of CRD, RBD and LSD. |
| | | **CO 2** | **Analyze-**the data using ANOVA. |
| | | **CO 3** | **Comparison-** between CRD, RBD over LSD. |
| | | **CO 4** | **Test for-** measuring equality of average yield in field experiment. |
| | | **CO 5** | **Draw-** a layout of split plot design. |

**Zoology**

| Paper No. | Paper/Course Name Couse Code | COs | Semester |
|---|---|---|---|
| | **B.Sc.III** | | **Semester-I/III/V** |
| 09 | **Comparative Anatomy of Vertebrates** | **CO 9** | Compare and Describe integumentary and Skeletal system with their derivatives |
| | | | Able to compare and describe the anatomical features of different chordates digestive system and respiratory system |
| | | | Able to Analyze, Compare and Explain details of circulatory and urinogeneital systems in different groups of vertebrates |
| | | | Able to Analyze, Compare and Explain details of nervous system of different vertebrate groups. Explain the sense organs and their functions of vertebrates |
| 10 | **Molecular Biology** | **CO 10** | Understand Organization of DNA and Mechanism and process of transcription |

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|---|---|---|---|
| | | | Describe Translation with respect to initiation, elongation & termination. Write properties of genetic code |
| | | | Describe wobble hypothesis |
| 11 | **Endocrinology** | **CO11** | Understand endocrine glands with respect to anatomy, histology and hormones. |
| | | | Understand and explain the role of hormones and regulation of hormones |
| | | | Identify and describe disorders of pituitary gland |
| 12 | **Wild Life Conservation & Management** | **CO 12** | Understand the basic concept of Wild life management |
| | | | Able to observe, evaluate and describe habitat types, physical biological parameters. |
| | | | Understand and apply the knowledge of GIS and Remote sensing in the habitat evaluation and management. |
| | | | Understand the basic concept of population ecology. Estimate the carrying capacity of any habitat. Utilize the basic knowledge of wildlife in Ecotourism. With this, Learner would also explain the concept of ecological persistence and perturbation. Develop new strategies for management of protected areas. |
| | **B.Sc.III** | | **Semester II/IV/VI** |
| 13 | **Developmental Biology** | **CO 13** | Understand the mechanism of fertilization and explain process of gametogenesis. |
| | | | Understand types of eggs and cleavages. Describe development of amphioxus |
| | | | Understand the basic concepts of Embryology and identify the chick embryo at different hours of incubation |
| | | | Describe extra embryonic membrane and explain significance of placenta in mammals. Learn about basic principle of ultra sound for fetus study |
| 14 | **Principles of Ecology** | **CO14** | Understand the concept of evolutionary and functional basis of animal ecology |
| | | | Understand what makes the scientific study of animal ecology crucial and exciting endeavor |
| | | | Apply this basic knowledge to solve the environmental issues related to anthropogenic activities and natural systems at local and global level |
| 15 | **Animal Behaviour** | **CO 15** | Understand and use the basic techniques in the study of animal behavior |
| | | | Improve basic knowledge of Ethology and assist in the application of acquired information in the behavioral studies |

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| 16 | **Applied Zoology-II** | **CO 16** | Understand the culture techniques in fishery and sericulture |
| | | | Acquired knowledge is Useful for the employment in the field of Fishery and Sericulture |

**Mathematics**

| Paper No. | Paper/Course Name Course Code | COs | Semester-V |
|---|---|---|---|
| **IX** | **Algebra-II KBP-S-MAT-3509** | | *Student will be able to*: |
| | | **CO 1** | construct different examples of Integral domains, Subrings, Fields by applying their corresponding definitions. |
| | | **CO 2** | apply the concept of homomorphism to study different properties of rings. |
| | | **CO 3** | construct vector subspace of given vector space from given linearly independent set. |
| | | **CO 4** | classify the given subset of vector space as linearly dependent or independent by using system of linear equations |
| | | **CO 5** | characterize linear transformations onto, one-to-one from its corresponding matrix. |
| | | **CO 6** | make use of inner product and norm to study their applications in geometry. |

| Paper No. | Paper/Course Name Course Code | COs | Semester-V |
|---|---|---|---|
| **X** | **Complex Analysis KBP-S-MAT-3510** | | *Student will be able to*: |
| | | **CO 1** | identify curves and regions in the complex plane defined by simple expressions. |
| | | **CO 2** | decide when and where a given function is analytic and find it series development. |
| | | **CO 3** | solve complex integrals using Residue theorem. |
| | | **CO 4** | calculate Real integrals using Residue theorem. |
| | | **CO 5** | classify various kinds of singularities. |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-V** |
| **XI** | **Integral Calculus** | | *Student will be able to*: |

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| | **KBP-S-MAT-3511** | **CO 1** | calculate the area by using limit of an infinite sum |
| | | **CO 2** | solve improper integrals of first and second kind by using comparison test and some other tests. |
| | | **CO 3** | compute indefinite and definite integral using by the method of substitution. |
| | | **CO 4** | compare beta and gamma functions and inter relation between them. |
| | | **CO 5** | use integration to calculate areas of regions in a plane, volumes of solids. |
| | | **CO 6** | discuss the convergence of improper integrals by using Abel's Test and Dirichlet's test. |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-V** |
| **XII** | **Partial Differential Equations KBP-S-MAT-3512** | | *Student will be able to*: |
| | | **CO 1** | construct partial differential equation by eliminating arbitrary constants, arbitrary functions. |
| | | **CO 2** | find the applications of partial differential equations in various field |
| | | **CO 3** | classify partial differential equations with respect to their order and linearity |
| | | **CO 4** | solve first order partial differential equation by Charpit's Method. |
| | | **CO 5** | develop skill to formulate physical problems as PDEs. |
| | | **CO 6** | classify Linear partial differential equations with constant Coefficients and find their complimentary functions and particular integrals by using various methods. |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-VI** |
| **XIII** | **Metric Space KBP-S-MAT-3613** | | *Student will be able to*: |
| | | **CO 1** | understand the generalization of concept distance to metric with examples. |
| | | **CO 2** | apply the concept of continuity to metric space to study some important properties of that space. |
| | | **CO 3** | identify the dense set, open set, closed set, totally bounded set, limit point in any metric space. |
| | | **CO 4** | develop the logic to construct Complete metric space, Compact metric space, connected space and path connected space |
| | | **CO 5** | construct uniformly continuous function and find the supremum and infimum of new space from given compact metric space and continuous function. |
| | | **CO 6** | find the difference between connected space and path connected space. |
| | | **CO 7** | study various properties connected space and path connected space. |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-VI** |

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| **XIV** | **Numerical Analysis KBP-S-MAT-3614** | | *Student will be able to*: |
| | | **CO 1** | apply numerical methods to find the solution of algebraic equations using different methods under different conditions. |
| | | **CO 2** | find the numerical solution of system of algebraic equations. |
| | | **CO 3** | apply various interpolation methods. |
| | | **CO 4** | work out numerical differentiation and integration wheneverroutine methods are not applicable. |
| | | **CO 5** | apply Trapezoidal rule, Simpson's 1/3rd rule, Simpson's 3/8th rule to calculate numerical differentiation and integration. |
| | | **CO 6** | develop the approach for the application of various numerical methods, numerical differentiation and integration to solve day-to-day life problems. |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-VI** |
| **XV** | **Graph Theory KBP-S-MAT-3615** | | *Student will be able to*: |
| | | **CO 1** | classify different types of graphs and discuss the difference among them. |
| | | **CO 2** | Perform different operations on graphs and study their matrix representation, adjacency matrix, incidence matrix. |
| | | **CO 3** | construct Planner graphs, Eulerian and Hamiltonian graphs and study their various properties. |
| | | **CO 4** | use Euler's formula for planner graphs. |
| | | **CO 5** | develop a technique to construct spanning trees required to cable companies. |
| | | **CO 6** | study different properties and applications of planer and non-planer graphs. |
| | | **CO 7** | understand relation between abstract duality and planarity of graph. |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-VI** |
| **XVI** | **Integral Transform KBP-S-MAT-3616** | | *Student will be able to*: |
| | | **CO 1** | recognize the different methods of finding Laplace transforms. |
| | | **CO 2** | calculate inverse Laplace by using different methods and use of first shifting theorem and second shifting theorem |
| | | **CO 3** | solve the differential equations by using Laplace and inverse Laplace |
| | | **CO 4** | have deep understanding of Laplace Transformation and its real-life application. |
| | | **CO 5** | find the Laplace transform of derivatives, integrals and periodic functions. |

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| | | **CO 6** | use the method of Laplace transforms to solve initial-value problems for linear differential equations with constant coefficients. |

B.Voc.-III

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-I and II** |
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| | | | *Student will be able to*: |
| **I** | **Business communication I** | **CO 1** | To distinguish among various levels of organizational communication and communication barriers while developing an understanding of Communication as a process in an organizatio |
| | | **CO 2** | To demonstrate his verbal and non-verbal communication ability through presentations. |
| | | **CO 3** | To stimulate their Critical thinking by designing and developing clean and lucid writing skills. |
| **II** | **Fundamental of food science** | **CO 1** | Understand the principles , physical andchemical components of food |
| | | **CO 2** | Examine the techniques available for processing |
| | | **CO 3** | Recognize and describe various food groups interms of selection, composition and grading |
| | | **CO 4** | Discuss the processing of cereals and pulses. |
| **III** | **Food preservation** | **CO 1** | Discuss various processing and preservation techniques |
| | | **CO 2** | Identify novel technologies in the processing |
| | | **CO 3** | Compare various food processing technology |
| **IV** | **Agro processing** | **CO 1** | Explain composition and structure of different cereals and pulses |
| | | **CO 2** | Discuss the working and principle of rice mill in detail and their parts |
| | | **CO 3** | Different methods of oil extractions |
| | | **CO 4** | Production of major spices in India & their importance in Indian diet |
| **V** | **Business communication** | **CO 1** | To put in use the basic mechanics of Grammar |
| | | **CO 2** | To provide an overview of Prerequisites to Business Communication |
| | | **CO 3** | To underline the nuances of Business communication. |

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| **VI** | **Bakery and confectionary** | **CO 1** | Identify and select ingredients for use in a variety of baked products |
| | | **CO 2** | Prepare a variety of baked products using creaming, sponge, muffin, basic custards methods, cake |
| | | **CO 3** | Describe and use the equipment typical to the baking process |
| **VII** | **Food chemistry** | **CO 1** | Explain the Structure and properties ofcarbohydrates |
| | | **CO 2** | Demonstrate the chemistry various lipids |
| | | **CO 3** | Discuss the classification and properties of aminoacid and proteins |
| **VIII** | **Fruit and vegetable processing** | **CO 1** | To acquire a basic knowledge of in the field of fruit and vegetable processing |
| | | **CO 2** | To acquire a fundamental background of the methods of fruit and vegetable processing |
| | | **CO 3** | To acquire a basic understanding of agriculture sector and processing of fruits and vegetables is of vital importance |

Rayat Shikshan Sanstha's

**KARMAVEER BHAURAO PATIL MAHAVIDYALAYA, PANDHARPUR**

## (Autonomous)

**Department of B.Sc(ECS)**

**B.Sc(ECS) -III**

**Course Outcomes (COs)**

| **Paper No.** | **Paper/Course Name** | **COs** | **Semester-V** |
|---|---|---|---|

| | Couse Code | | |
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| | | | *Student will be able to*: |
| **KBP-S-ECS-3534** | **Data Communication and Networking** | **CO 1** | Understand the basics of data communication, networking, internet and their importance. |
| | | **CO 2** | Analyze the services and features of various protocol layers in data networks, network communication using the layered concept, Open System Interconnect (OSI) and TCP/IP Model. |
| | | **CO 3** | Understand various types of transmission media, network devices and parameters of evaluation of performance for each media and device and analyze the analog and digital transmission in the physical layer. |
| | | **CO 4** | Analyze the contents in a given Data Link layer packet, based on the layer concept. Understand the concept of flow control, error control and protocols |
| | | **CO 5** | Understand the functions performed by a Network Layer and analyze connection establishment and congestion control, congestion control algorithm and routing algorithm |
| | | **CO 6** | Understand the principles of application layer, transport layer and presentation layer and their protocols |
| **KBP-S ECS-3536** | **Theory of Computer Science** | **CO 1** | Define basic concepts of automata theory and describe various forms of grammar to know functioning, capabilities and limitations of computers. |
| | | **CO 2** | Explain and construct finite state systems and Context Free Grammar for the given language. Construct regular expressions to recognize patterns and PDA, Turing machine to recognize various computing languages or problems. |
| | | **CO 3** | Apply various techniques and algorithms to transform computing models and grammar. |
| | | **CO 4** | Analyze and simplify CFG, classify various grammars according to the Chomsky hierarchy. |
| | | **CO 5** | Evaluate various classes of problems, grammar, languages, and language recognizer machines. |
| | | **CO 6** | Integrate the concepts of finite automata, regular expression and context free grammar to create a LEX and YAAC programs. Create regular expression for regular languages to recognize patterns. |
| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-V** |
| | | | *Student will be able to*: |
| **KBP-S-** | | **CO 1** | Understand What is Client side & server-side programming & its works on the client, server |

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| **ECS-3537** | **Programming Using PHP** | | side using php.Analyze the basic structure of a PHP web application and be able to install and maintain the web server, compile, and run a simple web application.Write PHP scripts to handle HTML forms |
| | | **CO 2** | Understand Object oriented concepts & program in php programing language.<br>Analyze and solve common Web application tasks by writing PHP programs. |
| | | **CO 3** | Understand &Learn different ways of connecting to MySQL,SQL,PERL through PHP, and how to create tables, enter data, select data, change data, and delete data. Connect to SQL Server and other data sources. |
| | | **CO 4** | Knowledgeable Various Web Techniques Variables,Server information,Processing forms,Setting response headers, Maintaining state,SSL |
| | | **CO 5** | Understand various type of PHP framework. |
| | | **CO 6** | knowledge and Logical skills about AJAX various techniques with program coding. |
| **KBP-S ECS-3538** | **Advanced Java** | **CO 1** | Gain the knowledge of J2EE architecture, MVC Architecture. (Knowledge) |
| | | **CO 2** | Summarize Multi -tier Application, Various Network Protocol. |
| | | **CO 3** | Gain the knowledge of Server Side programing by implementing Servlet and JSP. Understand and write the deployment descriptor and enterprise application deployment. (Knowledge, Application) |
| | | **CO 4** | Gain knowledge of frameworks such as Spring Architecture, JSF and Hibernate Architecture, Distinguish JDBC and Hibernate. (Knowledge, Comprehension ) |
| | | **CO 5** | Design and Develop various application by Integrating any of JSPs, Swing and Applet using Database , Spring, Hibernate by analyzing requirements and evaluating existing system. (Analysis, Synthesis, Evaluation) |

| Paper No. | Paper/Course Name Couse Code | COs | Semester-VI |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-3640** | **System Security** | **CO 1** | Define the principal concepts of cybersecurity including common industry vocabulary |
| | | **CO 2** | Identify bad actors on the Internet, their motivations, and common attack techniques. |
| | | **CO 3** | Describe the relationship between security and usability of a computer system. |
| | | **CO 4** | List common cybersecurity resources such as US-CERT, Mitre, SANS, etc. |
| | | **CO 5** | Identify optimal risk method based on advantages of each model given a specific scenario. |
| | | **CO 6** | Identify common security failures and methods to remediate those failures. |
| **KBP-S ECS-3541** | **Compiler Construction** | **CO 1** | Express the grammar of a programming language |
| | | **CO 2** | Build lexical and syntax analyzers and use them in the construction of scanners and parsers |
| | | **CO 3** | Perform the operations of semantic analysis |
| | | **CO 4** | Build a code generator |
| | | **CO 5** | Use different compiler optimization schemes in addition to efficient register allocation and garbage collection |
| | | **CO 6** | Design and program a complete working compiler for a given language |
| **KBP-S ECS-3542** | **Internet Programming Using ASP.NET** | **CO 1** | Understand the Microsoft .NET Framework and ASP.NET page structure |
| | | **CO 2** | Design web application with variety of controls |
| | | **CO 3** | Access the data using inbuilt data access tools |
| | | **CO 4** | Use Microsoft ADO.NET to access data in web Application |
| | | **CO 5** | Configure and deploy Web Application |
| | | **CO 6** | Develop secured web application |

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| **KBP-S ECS-3543** | **Angular JS** | **CO 1** | Understand the design of single-page applications and how Angular facilitates their development |
| | | **CO 2** | Separate the model, view, and controller layers of your application and implement them using Angular |
| | | **CO 3** | Master Angular expressions, filters, and scopes |
| | | **CO 4** | Build Angular forms |
| | | **CO 5** | Write Angular directives |
| | | **CO 6** | Unit test and end-to-end test your Angular applications |

| **Paper No.** | **Paper/Course Name Couse Code** | **COs** | **Semester-VI** |
|---|---|---|---|
| | | | *Student will be able to*: |
| **Skill Enhancemen Course** | **Mobile Application Development** | **CO 1** | Identify various concepts of mobile programming that make it unique from programming for other platforms, |
| | | **CO 2** | Critique mobile applications on their design pros and cons |
| | | **CO 3** | Utilize rapid prototyping techniques to design and develop sophisticated mobile interfaces. |
| | | **CO 4** | Program mobile applications for the Android operating system that use basic and advanced phone features. |
| | | **CO 5** | Deploy applications to the Android marketplace for distribution |
| **KBP-S-ECS-Lab-P-IX** | **Theory of Computer Science & Compiler Construction Practical** | **CO 1** | understand regular languages and finite automata. |
| | | **CO 2** | demonstrate knowledge of basic mathematical models of computation and describe how they relate to formal languages |
| | | **CO 3** | describe a broad overview of the theoretical foundations of computer science. |
| | | **CO 4** | think analytically and intuitively for problem ‐ solving situations in related areas of theory in computer science |
| | | **CO 5** | Build lexical and syntax analyzers and use them in the construction of scanners and parsers |
| | | **CO 6** | Use different compiler optimization schemes in addition to efficient register allocation and garbage collection |

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| **KBP-S-ECS-Lab-P-X** | **Programming Using PHP & ASP.NET** | **CO 1** | Study the MySQL function. |
| | | **CO 2** | Apply Session and Cookies in their Website |
| | | **CO 3** | Access the data using inbuilt data access tools |
| | | **CO 4** | Generate the Web form to Databaseconnectivity.<br>Infer the need of Regular Expression |
| | | **CO 5** | Use Microsoft ADO.NET to access data in web Application |
| | | **CO 6** | Configure and deploy Web Application |

| **Paper No.** | **Paper/Course Name<br>Couse Code** | **COs** | **Semester-VI** |
|---|---|---|---|
| | | | *Student will be able to*: |
| **KBP-S-ECS-Lab-P-XI** | **Advanced Java & Angular JS** | **CO 1** | learn to access database through Java programs, using Java Data Base Connectivity (JDBC) |
| | | **CO 2** | create dynamic web pages, using JSP |
| | | **CO 3** | use Struts frameworks, which gives the opportunity to reuse the codes for quick development. |
| | | **CO 4** | map Java classes and object associations to relational database tables with Hibernate mapping files |
| | | **CO 5** | Understand the design of single-page applications and how Angular facilitates their development |

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| **KBP-S-ECS-Lab-P-XII** | **Project Work** | **CO 1** | Apply and extend material learned throughout the program to design, develop and implement a software product. |
| | | **CO 2** | Demonstrate a sound technical knowledge of their selected project topic. |
| | | **CO 3** | Undertake problem identification, formulation and solution design. |
| | | **CO 4** | Design engineering solutions to complex problems utilising a systems approach. |
| | | **CO 5** | Demonstrate the knowledge, skills and attitudes of a professional engineer. |

## English Compulsory

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|---|---|---|---|
| English | English Compulsory: B A/ B Sc/ECS | | **Semester-V** |
| | | CO 1 | Apply the knowledge for competent and proficient to communicate properly |
| | | CO 2 | Understand the social commitment and value of good communication |
| | | CO 3 | Apply the skills to writing from time to time |
| | | CO 4 | Compare the skills of communication |
| | English Compulsory: B A/B Sc/ECS | | |
| | | CO 1 | Be competent and proficient to communicate properly |
| | | CO 2 | Understand the social commitment and value of good communication |
| | | CO 3 | Creative and will try his hands in writing from time to time |
| | | CO 4 | Compare the skills of communication |

## Optional Subjects

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|---|---|---|---|
| Marathi | साहित्यशास्त्र (पूर्वार्ध) VII DSE-5.1 | | **Semester-V** |
| | | CO1 | साहित्य लक्षणासंबंधीच्या विविध सिद्धांतांचा परिचय होईल. |
| | | CO2 | साहित्याचे स्वरूप समजून येईल |
| | | CO3 | साहित्याच्या विविध प्रयोजनांचा परिचय होईल |
| | | CO4 | साहित्याच्या निर्मितीप्रक्रिया अवगत होईल . |
| | | CO5 | शब्दशक्तींचा परिचय होईल |
| | भाषाविज्ञान व मराठी व्याकरण (पूर्वार्ध)- VIII DSE-5.2 | CO1 | मानवी जीवनातील भाषेचे स्वरूप व महत्त्व विद्यार्थ्यांना समजेल. |
| | | CO2 | विद्यार्थ्यांमध्ये भाषाविषयक वैज्ञानिक दृष्टीकोनाचा विकास होईल. |
| | | CO3 | भाषिक संप्रेषणाचा परिचय होईल. |
| | | Co4 | भाषा परिवर्तनाच्या स्वरूपाबाबत स्पष्टता येईल |

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| | | CO5 | मराठी भाषेच्या व्याकरणाचे स्वरूप समजेल. |
| | मध्ययुगीन मराठी वाङ्मयाचा इतिहास इ(पूर्वार्ध) १८००ते १९०१.स.- IX<br>DSE – 5.3 | CO1 | मध्ययुगीन मराठी वाङ्मयातील परंपरा व इतिहास याचा परिचय होईल |
| | | CO2 | मध्ययुगीन मराठी वाङ्मयाच्या निर्मिती प्रेरणा समजतील. |
| | | CO3 | ३ . मध्ययुगीन मराठी वाङ्मयाचे स्वरूप व वैशिष्ट्ये समजून येईल . |
| | | CO4 | मध्ययुगीन मराठी वाङ्मयाच्या सांस्कृतिक पार्श्वभूमीची उकल होईल |
| | | CO5 | मध्ययुगीन कालखंडातील प्रमुख संप्रदाय व ग्रंथनिर्मिती यांचा अनुबंध स्पष्ट होईल |
| | उपयोजित मराठी (पूर्वार्ध) XV<br>DSE5.4 - | CO1 | विद्यार्थ्यांना पारिभाषिक शब्दांचा परिचय होईल |
| | | CO2 | संगणकावरील मराठी लेखनाचे महत्त्व समजेल. |
| | | CO3 | मुद्रितशोधनाचे महत्त्व सांगून त्याचा सराव होईल. |
| | | CO4 | स्पर्धा परीक्षेतील मराठी भाषिक कौशल्याचा विकास होईल |
| | आधुनिक मराठी साहित्यातील विविध प्रवाह ( ग्रामीण व दलित)- XI<br>DSE 5.5 | CO1 | आधुनिक मराठी साहित्यातील प्रवाहांच्या निर्मितीची पार्श्वभूमी समजेल . |
| | | CO2 | ग्रामीण व दलित साहित्याच्या प्रवाहाचे स्वरूपप्रेरणा व वैशिष्ट्ये यांचे ,संकल्पना , आकलन करून घेतील. |
| | | CO3 | कादंबरी व आत्मकथन या वाङ्मयप्रकारचे स्वरूप समजावून सांगतील. |
| | साहित्यशास्त्र (उत्तरार्ध)- XII-DSE 6.1 | | Semester-VI |
| | | CO1 | रस संकल्पनेचा परिचय होईल. |
| | | CO2 | काव्यानंद मीमांसेचे स्वरूप समजून येईल. |
| | | CO3 | साहित्याच्या विविध प्रकारांचा आकलन होईल. |
| | | CO4 | साहित्यमूल्यांची स्वरूप स्पष्ट करतील |
| | भाषाविज्ञान व मराठी व्याकरण (उत्तरार्ध)- XIII DSE – 6.2 | CO1 | भाषाविज्ञान व मराठी भाषा यांच्यातील अनुबंध समजून येईल. |
| | | CO2 | वर्णनात्मक भाषाविज्ञानाचा परिचय होईल . |
| | | CO3 | मराठी भाषा बोली यांच्यातील परस्परसंबंध होईल |
| | | CO4 | मराठी भाषेवरील इतर भाषांचा प्रभाव समजून येईल. |
| | | CO5 | मराठी भाषेच्या व्याकरणाचे स्वरूप समजेल. |

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| | मध्ययुगीन मराठी वाङ्मयाचा इतिहास इ १८००ते ११०१.स. (उत्तरार्ध)- XIV DSE-6.3 | CO1 | मध्ययुगीन मराठी वाङ्मयातील परंपरा व इतिहास याचा परिचय होईल. |
| | | CO2 | मध्ययुगीन मराठी वाङ्मयातील निर्मितीच्या प्रेरणांचा परिचय होईल. |
| | | CO3 | पंडिती शाहिरी व बखर ,वाङ्मयाचे स्वरूप व वैशिष्ट्ये समजतील. |
| | | CO4 | मध्ययुगीन मराठी वाङ्मयाच्या सांस्कृतिक पार्श्वभूमीची आकलन होईल. |
| | | CO5 | मध्ययुगीन कालखंडातील प्रमुख संप्रदाय व ग्रंथनिर्मिती यांचा अनुबंध स्पष्ट होईल |
| | उपयोजित मराठी ( उत्तरार्ध) XV DSE-6.4 - | CO1 | मराठी भाषेचे विविध क्षेत्रातील महत्त्व व उपयोजन विद्यार्थ्यांना समजेल |
| | | CO2 | जाहिरात कलेची उपयुक्तता स्पष्ट करून संहिता लेखन कौशल्य अवगत होईल. |
| | | CO3 | विद्यार्थ्यांमध्ये निवेदन कौशल्याचा विकास होईल. |
| | | CO4 | ग्रंथपरीक्षण करता येईल. |
| | | CO5 | विद्यार्थ्यांमध्ये साहित्य कलेची आवड निर्माण होईल |
| | | CO6 | सर्जनशील लेखन कौशल्य प्राप्त होईल. |
| | आधुनिक मराठी साहित्यातील विविध प्रवाह स्त्रीवादी व) मुस्लीम ( XVI DSE-6.5 - | CO1 | आधुनिक मराठी साहित्यातील प्रवाहांचा परिचय होईल . |
| | | CO2 | स्त्रीवादी व मुस्लीम साहित्य प्रवाहांची संकल्पनास्वरूप , व प्रेरणा समजेल . |
| | | CO3 | स्त्रीवादी कथांचे स्वरूप समजेल |
| | | CO4 | मुस्लीम कवितेचे स्वरूप अवगत होईल . |
| **Hindi** | **Paper No. 7** **विशेष लेखक : भगवानदास मोरवाल - KBP-A-UG- HIN-3507** | | **Semester-V** |
| | | **CO 1** | छात्र भगवानदास मोरवाल के जीवन तथा साहित्य से परिचित हुए । |
| | | **CO 2** | छात्र भगवानदास मोरवाल कहानी साहित्य से परिचित हुए । |
| | | **CO 3** | छात्र सांप्रदायिक सद्भावना तथा स्वातंत्रोत्तर भारतीय समाज की मानसिकतासे अवगत हुए |
| | **Paper No. 12** **विशेष लेखक : भगवानदास मोरवाल- KBP-A- UG- HIN-3512** | | **Semester VI** |
| | | **CO 1** | छात्र हिंदी साहित्य की उपन्यास विधा से परिचित हुए । |
| | | **CO 2** | छात्र में उपन्यास की समीक्षा दृष्टि का विकास हुआ । |
| | | **CO 3** | छात्र भारतीय नारी के विविध रूपों से परिचित हुए । |

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| | **Paper No. 8**<br>**काव्यशास्त्र - KBP-A-UG-HIN- 3508** | | **Semester-V** |
| | | **CO 1** | छात्र में साहित्य निर्मिती प्रक्रिया का विकास हुआ । |
| | | **CO 2** | छात्र साहित्य/ काव्य के भेदों से परिचित हुए । |
| | | **CO 3** | छात्र काव्यालंकार से परिचित हुए । |
| | **Paper No. 13**<br>**आलोचना - KBP-A- UG-HIN- 3513** | | **Semester VI** |
| | | **CO 1** | छात्रकाव्य के विविध उपकरणों से परिचित हुए । |
| | | **CO 2** | छात्र में रसानुभूति की प्रक्रिया से अवगत हुए । |
| | | **CO 3** | छात्र आलोचना की विविध पद्धतियों तथा विमर्शों से परिचित हुए । |
| | **Paper No. 9**<br>**आदिकालीन और मध्य कालीन हिंदी साहित्य का इतिहास- KBP-A-UG- HIN- 3509** | | **Semester-V** |
| | | **CO 1** | छात्र हिंदी साहित्य के काल विभाजन तथा नामकरण को जानने लगे । |
| | | **CO 2** | छात्र आदिकालीन और मध्यकालीन काव्यधारा तथा प्रतिनिधि रचनाकारों से परिचित हुए । |
| | | **CO 3** | छात्र रीतिकालीन काव्यधारा तथा प्रतिनिधि रचनाकारों से परिचित हुए। |
| | **Paper No. 14**<br>**आधुनिक हिंदी साहित्य का इतिहास- KBP-A- UG- HIN-3514** | | **Semester VI** |
| | | **CO 1** | छात्र आधुनिक काव्यधारा तथा प्रतिनिधि रचनाकारों से परिचित हुए । |
| | | **CO 2** | छात्र आधुनिक गद्य विधा से परिचित हुए । |
| | | **CO 3** | छात्र विविध साहित्यिक विमर्शों से परिचित हुए । |
| | **Paper No. 10**<br>**प्रयोजनमूलक हिंदी-- KBP-A-UG- HIN- 3510** | | **Semester-V** |
| | | **CO 1** | छात्र हिंदी के व्यावहारिक पक्ष से परिचित हुए । |
| | | **CO 2** | छात्र में राष्ट्रभाषा के प्रति रूचि उत्पन्न हुई । |
| | | **CO 3** | छात्र कार्यालयीन पत्राचार से परिचित हुए । |

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| | **Paper No. 14**<br>**व्यावहारिक हिंदी KBP-A-UG- HIN- 3515 -** | | **Semester IV** |
| | | **CO 1** | छात्र अनुवाद के महत्त्व को समझते है । |
| | | **CO 2** | छात्र में हिंदी के माध्यम से रोजगार परक कौशल विकसित हुए । |
| | | **CO 3** | छात्र में पटकथा एवं संवाद लेखन का कौशल विकसित हुआ । |
| | **Paper No. 11**<br>**हिंदी भाषा-**<br>**KBP-A-UG- HIN- 3511** | | **Semester-V** |
| | | **CO 1** | छात्र भाषा के विविध रूपों से परिचित हुए । |
| | | **CO 2** | छात्र हिंदी शब्द समूह से परिचित हुए । |
| | | **CO 3** | छात्र को देवनागरी लिपि के उद्भव और विकास का ज्ञान हुआ । |
| - | **Paper No. 16**<br>**भाषा विज्ञान- KBP-A- UG-HIN- 3516** | | **Semester IV** |
| | | **CO 1** | छात्र में भाषा के प्रति वैज्ञानिक दृष्टि निर्माण हुई है । |
| | | **CO 2** | छात्र भाषा विज्ञान के विविध अंगों से परिचित हुए । |
| | | **CO 3** | छात्र पद और अर्थ से परिचित हुए । |
| **English** | Introduction to Literary Criticism- VII<br>KBP-UG-A-ENG3507 | | **Semester V** |
| | | CO 1 | Acquire the basics of literary criticism. |
| | | CO 2 | Compare various critical approaches. |
| | | CO 3 | Assimilate and appreciate literary texts critically. |
| | British Literature- VIII<br>KBP-UG-A-ENG3508 | CO 1 | Acquire the knowledge, stylistic strategies & diction of British Literature |
| | | CO 2 | Practice aesthetic & ethical values in life through literary text. |
| | | CO 3 | Comprehend the British poetry |
| | Indian English literature IX-<br>KBP-UG-A-ENG3509 | CO 1 | Understand gradual development of Indian English literature from mid-twentieth century to post 2000 period |
| | | CO 2 | Acquire the major genres/ themes through the study |
| | | CO 3 | Assimilate Indian socio-cultural ethos as revealed through texts prescribed and try to |

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| | | | correlate it with everyday situations |
| | Literatures in English- X KBP-UG-A-ENG3510 | CO 1 | Understand Afro-American fiction |
| | | CO 2 | Define features of Postcolonial Fiction |
| | | CO 3 | Analyze the postcolonial poetry |
| | Intro. to the Structure and Function of Modern Eng.- XI- KBP-UG-A-ENG3511 | CO 1 | Understand various concepts in linguists. |
| | | CO 2 | Compare various branches of linguistics. |
| | | CO 3 | Analyse of phrases and sentences |
| | Introduction to Literary Criticism- XII KBP-UG-A-ENG3612 | | **Semester VI** |
| | | CO 1 | Understand major trends in literary criticism. |
| | | CO 2 | Understand tenets of practical criticism. |
| | | CO 3 | Apply the knowledge to write critical appreciation of poetry. |
| | British Literature- XIII KBP-UG-A-ENG3613 | CO 1 | Explore the creativity & human experiences in fiction, poetry & drama |
| | | CO 2 | Comprehend of major trends & traditions of British Literature |
| | | CO 3 | Cultivate aesthetic & ethical values in life through literary text. |
| | Indian English literature XIV - KBP-UG-A-ENG3614 | CO 1 | Describe major genres/ themes through the study |
| | | CO 2 | Compare Indian socio-cultural ethos as revealed through texts prescribed and try to correlate it with everyday situations |
| | | CO 3 | Understand & interpret literature on their own and in further cultivate interest in study of literatures in English |
| | Literatures in English- XV KBP-UG-A-ENG3615 | CO 1 | Criticize critically to world literatures in English |
| | | CO 2 | Compare cultures across the world through literature |
| | | CO 3 | Analyze the postcolonial drama |
| | Introduction to the Structure and Function of Modern English- XVI KBP-UG-A-ENG3617 | CO 1 | Relate the organization of language |
| | | CO 2 | Explain language as a discourse. |
| | | CO 3 | Analyse of phrases and sentences |
| Politics | Government and Politics of | | **Semester-V** |

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| | Maharashtra- **VII** - KBP-A-POL - 3507 | CO 1 | explain the Sanyukta Maharashtra Movement in formation of Maharashtra |
| | | CO 2 | Identify the Social and Economical elements in politics of Maharashtra |
| | | CO 3 | discuss party politics in Maharashtra |
| | | CO 4 | explain coalition politics in Maharashtra |
| | Political Sociology **-VIII** - KBP-A-POL - 3508 | CO 1 | define meaning, nature and scope of Political Sociology |
| | | CO 2 | analyze different approaches of Political Sociology |
| | | CO 3 | explain determinants of Political Culture |
| | | CO 4 | explain agencies of Political Socialization |
| | Introduction to International Politics - IX KBP-A-POL - 3509 | CO 1 | compare approaches in the study of international politics and relations |
| | | CO 2 | discuss the objectives and determinants of foreign policy |
| | | CO 3 | determine elements of Foreign Policy |
| | | CO 4 | explain the types of diplomacy and functions of diplomats |
| | Comparative Government & Politics X - KBP- A-POL - 3510 | CO 1 | define the meaning and various approaches of Comparative Politics |
| | | CO 2 | compare Traditional and Structural Functional approach in the study of Comparative Politics |
| | | CO 3 | compare characteristics of the constitution of UK, USA and Switzerland |
| | | CO 4 | classify the composition, powers and functions of Executive of UK, USA and Switzerland |
| | Western Political Thought **XI** --KBP-A-POL - 3511 | CO 1 | explain concept of Ideal State of Plato |
| | | CO 2 | classify nature of the State described by Aristotle |
| | | CO 3 | analyze thoughts of Machiavelli on Politics and Morality |
| | | CO 4 | compare social contract theories explained by Hobbes, Locke and Rousseau |
| | Government and Politics of | | **Semester-VI** |

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| | Maharashtra -**XII** - KBP-A-POL - 3612 | CO 1 | discuss the Power and function Legislature of Maharashtra |
| | | CO 2 | explain the Executive and Judiciary in Maharashtra |
| | | CO 3 | analyze Rural and Urban Local self Government |
| | | CO 4 | summarize of 73$^{th}$ and 74$^{th}$ constitutional amendment |
| | Political Sociology -**XIII** - KBP-A-POL - 3613 | CO 1 | explain the tools and influencing factors of Political Participation |
| | | CO 2 | discuss the importance of Political Communication |
| | | CO 3 | elaborate determinants of Political Elites |
| | | CO 4 | explain meaning and nature of Political Change |
| | Introduction to International Politics - **XIV** KBP-A-POL - 3614 | CO 1 | explain the meaning and characteristics of Balance of Power |
| | | CO 2 | examine achievements and failure of United Nations |
| | | CO 3 | criticize New World Order |
| | | CO 4 | evaluate India's foreign policy neighboring countries |
| | Comparative Government & Politics- **XV** KBP-A-POL - 3615 | CO 1 | compare the power and functions of legislature in UK,USA and Switzerland |
| | | CO 2 | define the Judicial Review in U.S.A. |
| | | CO 3 | compare federal and unitary government |
| | | CO 4 | interpret party politics in UK,USA and Switzerland |
| | Western Political Thought – **XVI**--KBP-A-POL - 3616 | CO 1 | explain dialectics of Hegel |
| | | CO 2 | interpret historic materialism and proletarian revolution in Marxism |
| | | CO 3 | explain J.S. Mill's concept of concept liberty |
| | | CO 4 | discuss Harold Laski's concept of democratic socialism |

| **Paper** | **Paper/Course Name** | **COs** | **Semester-V** |
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| **Paper : VII** | Ancient India (Pre-Historic Period to 650 A.D.) KBP-A-UG-HIS-357 | CO 1 | Compare different sources in ancient India |
| | | CO 2 | Understand how human life evolved in ancient India |
| | | CO 3 | Compare Indus culture in India and other cultures in the world |
| | | CO 4 | The social life of the Vedic period can be explained to the student. |
| **Paper : VIII** | Mughal India (1526A. D.-1707A. D.) KBP-A-UG-HIS-358 | CO 1 | Compare Islam and Hindu culture of Medieval India |
| | | CO 2 | compare the different Sources of Mughal Period |
| | | CO 3 | Recalls how was the Shershahs Power arised |
| | | CO 4 | understand how the Mughal Empire extended in Akbar Period |
| **Paper : IX** | Expansion and Downfall of the Maratha Power (1707-1818 A. D.)KBP-A-UG-HIS- 359 | CO 1 | Compare different sources of Maratha period |
| | | CO 2 | analyze the civil war between Chatrapati Shahu and Tarabai |
| | | CO 3 | find out why the third Panipat war took place |
| | | CO 4 | understand Bajirao and his policy towards the south and north |
| **Paper : X** | Modern World (1870-2000 A. D.) KBP-A-UG-HIS-3510 | CO 1 | Acquire the knowledge of the function of great character in Europe like Bismark |
| | | CO 2 | elaborate the concept of Modern world |
| | | CO 3 | analyze the work Warsaw pact |
| | | CO 4 | relate the society and Russian revolution and its impact on world |
| **Paper : XI** | Historical Sources and Research Places KBP-A-UG-HIS-3511 | CO 1 | explain the meaning and definition of History |
| | | CO 2 | classify and evaluate the Historical sources |
| | | CO 3 | understand the auxiliary sciences of History |

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| | | CO 4 | develop the skill of writing process of History |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-VI** |
| **Paper : XII** | Ancient India (Pre-Historic Period to 650 A.D.) KBP-A-UG-HIS-3612 | CO 1 | understand the importance of religious sects in ancient India. |
| | | CO 2 | understand the originate and development of Mauryan Empire. |
| | | CO 3 | Compare Satvahan and Gupt period of Social and Cultural condition |
| | | CO 4 | understand the Importance of Vardhan and Vakatak periods |
| **Paper : XIII** | Mughal India (1526A. D.-1707A. D.) KBP-A-UG-HIS-3613 | CO 1 | Understand the Golden Age of Shah Jahan Period |
| | | CO 2 | compare Aurangzebs Relgious Policies |
| | | CO 3 | compare the administration of Modern Period |
| | | CO 4 | Understand how the Mughal architecture was developed |
| **Paper : XIV** | Expansion and Downfall of the Maratha Power (1707-1818 A. D.)KBP-A-UG-HIS- 3614 | CO 1 | Reveal how the revival of Maratha power took place during the time of Peshva Madhavrao |
| | | CO 2 | analyze the first English Maratha war |
| | | CO 3 | find out the reasons why the Maratha power was ended |
| | | CO 4 | compare Shivkal and Peshva administration systems |
| **Paper : XV** | Modern World (1870-2000 A. D.) KBP-A-UG-HIS-3615 | CO 1 | Explains the reasons of the first and second world war |
| | | CO 2 | criticize the Ist and IInd world war and its impact on world. |
| | | CO 3 | understand the Cold War and function of UNO. |
| | | CO 4 | understand the modern world concept like Privatization, liberty, Globalization etc. |

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| **Paper : XVI** | Historical Sources and Research Places KBP-A-UG-HIS-3616 | CO 1 | Student will able to identify the types of Forts |
| | | CO 2 | classify the museums and understand its importance. |
| | | CO 3 | develop the skill the survey of Historical places |
| | | CO 4 | understand the function of Historians |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-V** |
| **Paper : VII** | History of Ancient Maharashtra KBP-A-UG-HIS-357 | CO 1 | Compare the different sources in ancient India |
| | | CO 2 | Identify the different Places where Culture emerged in ancient India |
| | | CO 3 | understand the Political history of Satvahana in ancient Maharashtra. |
| | | CO 4 | analyze the Cultural contribution of Satvahana period . |
| **Paper :VIII** | Political Ideas and Institutions in Ancient India KBP-A-UG-HIS-358 | CO 1 | define the sources of Political Idea and Institutions in Ancient India |
| | | CO 2 | understand the origin of states in Ancient India |
| | | CO 3 | summarize the saptang theory of Kautilya |
| | | CO 4 | introduce the origin of kingship and council of ministry in Ancient India |
| **Paper : IX** | Religious History of Ancient India KBP-A-UG-HIS-359 | CO 1 | Compare various ancient Indian religions. |
| | | CO 2 | Evaluate the Vedic religions. |
| | | CO 3 | analyze the sacrificial system in post-Vedic culture. |
| | | CO 4 | observe the development of various sects in ancient Indian culture. |
| **Paper : X** | Art and Architecture in Ancient India KBP- | CO 1 | Understand the importance of art in Ancient India. |
| | | CO 2 | analyze the Buddha Philosophy of Ashoka Period |

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| | A-UG-HIS-3510 | CO 3 | Describe the Art in the Shugna time |
| | | CO 4 | compare foreign Architecture with Kushana Period |
| **Paper : XI** | Tourism Development in India KBP-A-UG-HIS-3511 | CO 1 | categorize the definition, meaning, objectives and contribution of tourism in its history. |
| | | CO 2 | Compare information on different types of tourism. |
| | | CO 3 | analyze the financial contribution of tourism. |
| | | CO 4 | make comparative assessments of historically important Museums and Temples. |
| **Paper No.** | **Paper/Course Name Course Code** | **COs** | **Semester-VI** |
| **Paper : XII** | History of Ancient Maharashtra KBP-A-UG-HIS-3612 | CO 1 | understand the Cultural contribution of wakataka. |
| | | CO 2 | find out the originate of Chalukya Power |
| | | CO 3 | understand how the shilahar family originate in ancient Maharashtra |
| | | CO 4 | Trace the origins of the Yadav family back to the Political work and Cultural contribution of the students |
| **Paper :XIII** | Political Ideas and Institution in Ancient India KBP-A-UG-HIS-3613 | CO 1 | Understand Indian judicial system |
| | | CO 2 | compare the ancient Indian defence policy and modern Indian defence policy. |
| | | CO 3 | analyze the imperialism in ancient India. |
| | | CO 4 | criticize the village administration in ancient India. |
| **Paper :XIV** | Religious History of Ancient India | CO 1 | criticize of various ancient Indian religions. |
| | | CO 2 | observe the development of philosophy of various religions in ancient India. |

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| | KBP-A-UG-HIS-3614 | CO 3 | review the impact of various religions on the society in ancient India. |
| | | CO 4 | understand the character of Mahatma Gautam Buddha and Vardhman Mahavira in ancient times. |
| **Paper : XV** | Art and Architecture in Ancient India KBP-A-UG-HIS-3615 | CO 1 | Understand the great rock architecture site in Ancient India |
| | | CO 2 | analyze of the Architecture development in Gupta Period |
| | | CO 3 | compare the Architecture of South and North Indian Temples |
| | | CO 4 | Understand the art of Painting in Ancient India |
| **Paper :XVI** | Principals and Methods in Archaeology KBP-A-UG-HIS-3616 | CO 1 | understand the development of archeology in India. |
| | | CO 2 | Explain the excavation method from a comparative point of view. |
| | | CO 3 | Explain importance of inscriptions, coins and archeological remains in Ancient Indian history. |
| | | CO 4 | evaluate the chronology of ancient Indian history. |
| Geography | Regional Planning and Development - Paper VII DSC 7 | | **Semester V** |
| | | **CO 1** | Acquire the Knowledge of importance of regional planning. |
| | | **CO 2** | Understand the concepts of region, regionalization, regional planning & development and detailed knowledge of region. |
| | | **CO 3** | Relate with indicators of measurement of development |
| | | **CO 4** | Understand of Growth Pole Model, Center place Theory and Growth Foci Model in Indian context |
| | Urban Geography DSE 1A- Paper VIII | **CO 1** | Relate the importance of urban settlements through urban geography. |
| | | **CO 2** | Interpret the types of urban Settlements, Site and situations. |
| | | **CO 3** | Familiarize with an idea of relationship between human activities and urban development. |
| | | **CO 4** | Understand the urban problems and capable to handling of present problematic situations |

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| | | | in urban areas. |
| Paper VIII | Agriculture Geography DSE 1B | **CO 1** | Compare the importance and modern techniques of Agricultural geography. |
| | | **CO 2** | Understand the factors affecting on agriculture. |
| | | **CO 3** | Relate agriculture theories, green revolution and problems associated with agriculture |
| | | **CO 4** | Criticize the Agricultural Land use theory. |
| Paper IX | Population Geography DSE 2A | **CO 1** | Understand the population geography along with relevance of demographic data. |
| | | **CO 2** | Summarize of distribution and trends of population growth in the developed and less developed countries, along with population concepts. |
| | | **CO 3** | Describe the implications of population composition in different regions of the world. |
| | | **CO 4** | Discuss contemporary issues in the field of population studies. |
| Paper IX | Resource Geography DSE 2B | **CO 1** | Explain importance of Resources. |
| | | **CO 2** | Describe distribution, utilization and problems of resources like water, forest, energy and human. |
| | | **CO 3** | Exemplify conventional and non- conventional resource. |
| | | **CO 4** | Understand the sustainability of natural resource development. |
| | Evolution of Geographical Thought DSC 8- Paper X | | **Semester VI** |
| | | **CO 1** | Understand the basic theme, ideas and approaches of geographic knowledge. |
| | | **CO 2** | Discuss the debates in the geographical studies. |
| | | **CO 3** | Understand recent trends in Geography. |
| | | **CO 4** | Summarie the Quantitative revolution in Geography |
| | Geography of Health and Wellbeing DSE 3A- Paper XI | **CO 1** | Understand various geographical perspectives related to human health |
| | | **CO 2** | Develop awareness of human health and environment. |
| | | **CO 3** | Familiar with geographical background of diseases and their regional pattern. |
| | | **CO 4** | Discuss the impact of climate change on human health. |

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| | Political Geography DSE 3B- Paper XI | **CO 1** | Understand the history and development of political geography. |
| | | **CO 2** | Describe evaluation of state and nation. |
| | | **CO 3** | Explain the Geo-political theories. |
| | | **CO 4** | Investigate problems and disputes of India with the most current research topics in political geography. |
| Paper XII | Hydrology and Oceanography DSE 4A | **CO 1** | Understand the hydrological cycle related to formation of precipitation, infiltration, ground water recharge. |
| | | **CO 2** | Acquaint the human interference on hydrological cycle and its impact on globally drought region, flooded area. |
| | | **CO 3** | Summaries the ocean floor topography, ocean properties and circulations. |
| | | **CO 4** | Outline Coral Reefs and Marine Deposits |
| | Social Geography DSE 3A- Paper XII | **CO 1** | Understand the concept, nature and scope of social geography. |
| | | **CO 2** | Explain the problems and prospects of society in India. |
| | | **CO 3** | Describe the social categories and their spatial distribution. |
| | | **CO 4** | Familiarize with concepts of social wellbeing, welfare and social problem in India. |
| | Map Making and Map Interpretation DSC 9- Practical | **CO 1** | Understand the map, concept of scale and projection. |
| | | **CO 2** | Knowledge about the analysis of landforms and its identification. |
| | | **CO 3** | Understand basic information to the students about S.O.I. toposheets and I.M.D. weather reports |
| | | **CO 4** | Apply the skills about map interpretation. |
| | Advanced Tools, Techniques & Field Work DSC 10- Practical II | **CO 1** | Understand the importance of field work and advanced Techniques in Geography. |
| | | **CO 2** | Implement modern tool and techniques in Geography. |
| | | **CO 3** | Explain the basics and trained in instrumental survey. |
| | | **CO 4** | Familiarize with computer, GIS, GPS and Remote Sensing. |

| Economics | Micro Economics-Paper –VII-KBP-A-UG-ECO-357 | COs | Semester-V |
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| | | **CO 1** | Explain the concepts of micro economics |
| | | **CO 2** | Explain consumers decision making |
| | | **CO 3** | Identify consumers behavior in market |
| | | **CO 4** | Analyze the theories of cost and production |
| | **Macro Economics-Paper- VIII KBP-A-UG-ECO-358** | **CO 1** | Explain the concept of Macro Economics |
| | | **CO 2** | Classify different concepts of national Income |
| | | **CO 3** | Explain output and employment concepts of Keynes |
| | | **CO 4** | Describe the theories of demand and supply of money |
| | **History of economic thought - Paper-IX KBP-A-UG-ECO-359** | **CO 1** | Identify the importance of classical economist |
| | | **CO 2** | Examine the thoughts of socialism |
| | | **CO 3** | Discusse on Alfred Marshalls thoughts of synthesizer |
| | | **CO 4** | Explain the economic contribution of Nobel laureates |
| | **Economics of Development-Paper -X KBP-A-UG-ECO-360** | CO 1 | Explain the concepts of under developed countries |
| | | CO 2 | Understand theories of economics development |
| | | CO 3 | Develop the Knowledge about the sectorial view of development |
| | | CO 4 | Explain the role of human resources in economic Development |
| | **Agricultural Economics KBP-A-UG-ECO-361-Paper –XI** | CO 1 | Identify the important of agricultural and allied activities in rural economy of India |
| | | CO 2 | Explain land reforms programmes in India |
| | | CO 3 | Discuse on various issues related Agriculture |
| | | CO 4 | Identify technological changes in agriculture |

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| | **B. Come.-III-<br>(Com) Business Economics-III<br>KBPM-C-ECO-232-** | **CO 1** | Explain the concepts of economics growth and development |
| | | **CO 2** | Identify the theories of economics growth and development |
| | | **CO 3** | Compare human resources and economic development |
| | | **Co 4** | Discuss on the problems related to economic growth |
| **Semester-VI** | | | |
| | **Micro Economics<br>KBP-A-UG-ECO-3612- B A. III Paper –XII** | **CO 1** | Discuss on characteristics of various markets in the economy |
| | | **CO 2** | Discuss on prices determination in various markets of economy |
| | | **CO 3** | Explain the theories of wage and rent |
| | | **CO 4** | Explain the theories of interest and profit |
| | **Macro Economics<br>KBP-A-UG-ECO-3613-<br>Paper- XIII** | **CO 1** | Discuss the theories trade cycles |
| | | **CO 2** | Examine various growth models |
| | | **CO 3** | Describe various aspects of international trade |
| | | **CO 4** | Analyze the concepts of inflection and deflection |
| | **History of economic thought - Paper-XIV<br>KBP-A-UG-ECO-3614** | **CO 1** | Describe the economic ideas of Keynes |
| | | **CO 2** | Understand the economic thoughts of Joseph Schumpeter |
| | | **CO 3** | Assess the economic ideas of Indian economist |
| | | **CO 4** | Identify the importance of advanced Indian economic thoughts |
| | **Economics of Development<br>KBP-A-UG-ECO-3615-<br>Paper –XV** | **CO 1** | Explain the role of foreign capital in economic development |
| | | **CO 2** | Explain the role of trade in economic development |
| | | **CO 3** | Understand the role of monetary and fiscal policy |
| | | **CO 4** | Identify the role of MNCs and natural resources in developing countries |
| | **Agricultural Economics-** | **CO 1** | Discuss the problems of agricultural credit |

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| | **Paper –XVI**<br>**KBP-A-UG-ECO-3616** | **CO 2** | Discuss the problems of agricultural Marketing |
| | | **CO 3** | Describe the concepts of agricultural prices |
| | | **CO 4** | Assess the impact of new economic policy and WTO on Indian agricultural sector |
| **B. Come.-III (Com)** | **Business Economics-III**<br>**KBPM-C-ECO-232** | **CO 1** | Understand the history, objectives and evaluation of Indian paining |
| | | **CO 2** | Identify the Importance, Size and composition and problems of foreign capital |
| | | **CO 3** | Assess the impact of new economic policy on Indian economy |
| | | **CO 4** | Explain the role of international institutions in indies development |