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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

|  |  |  |  |
| --- | --- | --- | --- |
| **Course Code** | **20CR2024** | **Duration** | **3hrs** |
| **Course Title** | **CYBER CRIME** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | Examine the impact of software piracy and its various types. | CO2 | A | 10 |
|  | b. | Write short notes on extortion. | CO2 | A | 10 |
|  |  | **(OR)** |  |  |  |
| 2. |  | Prepare a suitable report on any two of the existing phishing web sites and list the possible counter measures to prevent ourselves from the phishing kind of cyberattacks. | CO2 | A | 20 |
|  |  |  |  |  |  |
| 3. |  | Classify viruses and provide a detailed description of their various stages. | CO3 | U | 20 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Describe the operational mechanism of DoS and DDoS attacks. | CO4 | R | 10 |
|  | b. | Represent a real time scenario pertaining to the cybersquatting. | CO4 | U | 10 |
|  |  |  |  |  |  |
| 5. | a. | Analyze how Intellectual Property Rights (IPR) contribute to safeguarding against cyberattacks. | CO5 | An | 10 |
|  | b. | Develop a detailed plan for recovering digital evidence from deleted files. | CO5 | C | 10 |
|  |  | **(OR)** |  |  |  |
| 6. | a. | Explain the IPR conventions in detail. | CO5 | U | 10 |
|  | b. | Illustrate imaging of the files used in digital forensics. | CO5 | A | 10 |
|  |  |  |  |  |  |
| 7. |  | Summarize the penalties and offences outlined in IT Act. | CO6 | E | 20 |
|  |  | **(OR)** |  |  |  |
| 8. |  | Produce the details of the cyber law including the law number, name, and any recent amendments related to the cyber investigation. | CO6 | A | 20 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Define cybercrime and distinguish it from conventional crime. | CO1 | R | 10 |
|  | b. | Explain the causes and challenges associated with cybercrime. | CO1 | U | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

|  |  |
| --- | --- |
|  | **COURSE OUTCOMES** |
| CO1 | know various forms of cyber crimes. |
| CO2 | understand the prevention techniques of cybercrimes. |
| CO3 | understand the role of victims and offenders in cyberspace. |
| CO4 | understand the definitional, technical and social aspects of cybercrimes. |
| CO5 | understand the emerging crime threats and trends in cyberspace. |
| CO6 | have an awareness on the existing legal provisions for cyber-crime prevention. |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| **Course Code** | **20CR2026** | **Duration** | **3hrs** |
| **Course Title** | **GENDER AND CRIME** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | i) Define the concept of gender and crime.  ii) Explain its scope and significance in criminological studies. | CO1 | U | 10 |
|  | b. | i) Analyse how gender influences patterns of crime and victimization.  ii) Evaluate the need for studying gender in criminology with relevant examples. | CO3 | E | 10 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | Differentiate between gender equality and gender inequality with suitable examples. | CO2 | A | 10 |
|  | b. | Explain how these concepts impact crime and criminal justice. | CO2 | A | 10 |
|  |  |  |  |  |  |
| 3. | a. | Critically examine the role of gender sensitivity in law enforcement and judicial processes. | CO3 | C | 10 |
|  | b. | Suggest measures to improve gender-sensitive approaches in crime prevention and justice administration. | CO3 | C | 10 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Explain the sociological definition of gender and its key components. | CO4 | A | 10 |
|  | b. | Discuss how masculinity and femininity are socially constructed. | CO4 | A | 10 |
|  |  |  |  |  |  |
| 5. | a. | Analyze the impact of the gender pay gap on individuals and society. | CO5 | An | 10 |
|  | b. | Evaluate the effectiveness of policies aimed at reducing gender-based wage disparities. | CO5 | An | 10 |
|  |  | **(OR)** |  |  |  |
| 6. | a. | Explain the relevance of Strain Theory and Anomie Theory in understanding gender and crime and state how these theories account for gender differences in criminal behaviour. | CO2 | A | 10 |
|  | b. | Analyze the significance of Social Control Theory and Cultural Transmission Theory in explaining gendered patterns of crime. | CO4 | An | 10 |
|  |  |  |  |  |  |
| 7. | a. | Discuss how gender influences criminal behaviour and victimization patterns. | CO6 | E | 10 |
|  | b. | Evaluate the effectiveness of constitutional provisions and laws protecting women from gender discrimination, providing relevant case studies or examples. | CO4 | E | 10 |
|  |  | **(OR)** |  |  |  |
| 8. | a. | Elucidate the role of international instruments such as the ICCPR and ICESCR in ensuring gender rights. | CO4 | U | 10 |
|  | b. | Discuss how the mentioned frameworks contribute to global gender equality. | CO4 | U | 10 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Classify the types of crimes predominantly committed by males, females, and transgender individuals. | CO2 | R | 10 |
|  | b. | i) Explain the types and causes of crimes committed by transgender individuals against other transgender individuals.  ii) Evaluate the existing protective measures meant for transgender people. | CO3 | E | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

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|  | **COURSE OUTCOMES** |
| CO1 | Acquire knowledge regarding gender and crime. |
| CO2 | Identify societal construction on gender gap and contemporary specific theories to overcome it. |
| CO3 | Interpret the Indian laws in gender equality. |
| CO4 | Understand various international instrument on gender equality. |
| CO5 | Obtain theoretical knowledge on gender and crime. |
| CO6 | Compare the statistics of crime committed by different gender. |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| **Course Code** | **20CR2029** | **Duration** | **3hrs** |
| **Course Title** | **RESTORATIVE JUSTICE** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | **Define** Restorative Justice and **describe** its key features, objectives, and principles. | CO1 | R | 10 |
|  | b. | **List** and **explain** the three pillars of Restorative Justice and their role in the justice system. | CO1 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 2. |  | i) Describe the role of Restorative Justice in handling juveniles in conflict with the law, highlighting its impact on rehabilitation and reintegration.  ii) Highlight the provisions available in the JJ Act in this regard. | CO2 | U | 20 |
|  |  |  |  |  |  |
| 3. | a. | Present the principles of Restorative Justice to design an effective program, outlining key strategic approaches, model selection, and outcome expectations. | CO3 | A | 10 |
|  | b. | **Describe** how Restorative Justice can be effectively implemented in a criminal justice system, | CO4 | C | 10 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | **Compare** the Restorative Justice approaches used in South Africa, New Zealand, and North America, highlighting their cultural significance and effectiveness. | CO4 | C | 10 |
|  | b. | **Examine** how Rwanda’s Restorative Justice response to genocide has contributed to reconciliation and justice, and assess its impact on post-conflict society. | CO5 | E | 10 |
|  |  |  |  |  |  |
| 5. |  | Analyze the role of the UN Declaration of Victims of Crime and Victims of Abuse of Power in shaping Restorative Justice policies in India, and list its impact on securing support from criminal justice agencies. | CO5 | An | 20 |
|  |  | **(OR)** |  |  |  |
| 6. |  | Examine the constitutional and legislative provisions in India that support the implementation of Restorative Justice, with reference to the CrPC (BNSS) and other legal frameworks. | CO4 | E | 20 |
|  |  |  |  |  |  |
| 7. | a. | Interpret the conceptual challenges in implementing Restorative Justice and their impact on its effectiveness. | CO3 | An | 10 |
|  | b. | Examine the gaps in the Restorative Justice system from the perspectives of victims, offenders, and crime dynamics. | CO5 | C | 10 |
|  |  | **(OR)** |  |  |  |
| 8. |  | i)Evaluate the effectiveness of Restorative Justice principles in addressing conflicts in non-criminal contexts.  ii) Highlight the impact of implementing RJ in schools, workplaces, and communities. | CO6 | C | 20 |
| **COMPULSORY QUESTION** | | | | | |
| 9. |  | Explain the methods used in Restorative Justice, including i)Victim-Offender Mediation, ii) Community and Family Group Conferences, iii) Circle Sentencing, iv) Peace-making Circles v) Victim Assistance. | CO6 | E | 20 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

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|  | **COURSE OUTCOMES** |
| CO1 | Identify the principles underlying the restorative justice paradigm. |
| CO2 | Identify the historical and theological roots of restorative justice. |
| CO3 | Compare restorative and retributive justice models. |
| CO4 | Evaluate their assumptions about the role of offender, victim, State, and community in the context of crime and justice. |
| CO5 | Explain the relationship between reintegrative and restorative justice, crime theories, prevention and treatment. |
| CO6 | Learn how restorative justice programs can be evaluated. |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| **Course Code** | **20FS2026** | **Duration** | **3hrs** |
| **Course Title** | **FORENSIC BIOLOGY AND SEROLOGY - II** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | Describe the Second law of Mendel. | CO1 | R | 10 |
|  | b. | Explain complete and incomplete dominance. | CO1 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | Briefly describe human genetics. | CO1 | U | 10 |
|  | b. | Illustrate the details of this equation - p2+2pq+p2 along with the assumptions of HWE. | CO3 | U | 10 |
|  |  |  |  |  |  |
| 3. | a. | Explain how a blood stain pattern changes when it comes in contact with a surface. | CO2 | U | 10 |
|  | b. | List the types of blood stain patterns | CO2 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Explain the following terms in context with BPA.   1. Surface tension 2. Viscosity 3. Capillary action 4. Speed 5. Gravity | CO3 | R | 10 |
|  | b. | Define blood and state the properties and composition of blood. | CO3 | R | 10 |
|  |  |  |  |  |  |
| 5. | a. | Describe the structure of hair and types of hair scale pattern. | CO4 | R | 10 |
|  | b. | Explain the hair growth cycle. | CO4 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 6. | a. | Describe examination of fibers. | CO5 | R | 10 |
|  | b. | Distinguish between human and animal hair. | CO5 | R | 10 |
|  |  |  |  |  |  |
| 7. | a. | Define diatoms and elaborate its types. | CO4 | U | 10 |
|  | b. | Illustrate the collection of entomological evidence | CO4 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 8. | a. | Describe the factors affecting succession and colonization of insects on a dead body. | CO6 | U | 10 |
|  | b. | Elaborate the techniques for insect identification. | CO6 | U | 10 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Explain the life cycle of insect of Diptera order. | CO6 | U | 10 |
|  | b. | Explain the third law of inheritance with the help of Punnett square. | CO1 | R | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

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|  | **COURSE OUTCOMES** |
| CO1 | to know about the measures of genetic variation |
| CO2 | determination of species of origin-ring test |
| CO3 | testing procedures and factor effecting |
| CO4 | human blood group systems |
| CO5 | new approaches in bloodstain grouping |
| CO6 | non-genetic approaches to individualization |

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**END SEMESTER EXAMINATION – MAY/ JUNE 2025**

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| **Course Code** | **21CP3006** | **Duration** | **3hrs** |
| **Course Title** | **ADVANCED SOCIAL PSYCHOLOGY** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | | **CO** | **BL** | | **M** | |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | | | | |
| 1. | a. | Describe two current trends in social psychology. | CO2 | | | A | | 10 |
|  | b. | How have these trends influenced the study of human behavior in social contexts? | CO2 | | | A | | 10 |
|  |  | **OR** |  | | |  | |  |
| 2. | a. | Compare the experimental and observational approaches used in social psychology. | CO3 | | | E | | 10 |
|  | b. | List the strengths and limitations of each approach. | CO3 | | | E | | 10 |
|  |  |  |  | | |  | |  |
| 3. | a. | Explain how heuristics, framing, and anchoring influence social judgments and decision-making. | CO2 | | | A | | 10 |
|  | b. | Provide real-life examples to support your answer. | CO2 | | | A | | 10 |
|  |  | **OR** |  | | |  | |  |
| 4. |  | Discuss the role of counterfactual thinking and mental simulation in shaping emotional and cognitive responses to social situations. | CO4 | | | E | | 20 |
|  |  |  |  | | |  | |  |
| 5. | a. | Analyze the impact of social identity and social comparison processes on group behavior. | CO5 | | | An | | 10 |
|  | b. | How do categorical differentiation and group cohesiveness influence intergroup relations? | CO5 | | | An | | 10 |
|  |  | **OR** |  | | |  | |  |
| 6. | a. | Explain how group decision-making processes can be affected by groupthink or conformity. | CO2 | | | A | | 10 |
|  | b. | Suggest strategies to improve group decision outcomes. | CO2 | | | A | | 10 |
|  |  |  |  | | |  | |  |
| 7. | a. | Explain the concept of social norms and analyze how and why individuals conform to them. | CO2 | | | A | | 10 |
|  | b. | Identify the factors that influence the degree of conformity. | CO2 | | | A | | 10 |
|  |  | **OR** |  | | |  | |  |
| 8. | a. | Discuss the concept of compliance. | CO3 | | | E | | 10 |
|  | b. | Provide examples to illustrate how compliance is achieved and list the psychological consequences it may have. | CO3 | | | E | | 10 |
|  | | | | | | | | |
| **COMPULSORY QUESTION** | | | | | | | | |
| 9. | a. | Critically evaluate the psychological foundations of intergroup conflict through the lenses of relative deprivation, realistic conflict theory, and social identity theory. | CO3 | | | An | | 10 |
|  | b. | Discuss how structural conditions, pre-dispositional variables, and conflict resolution strategies can be used to promote social harmony in diverse societies. | CO3 | | | An | | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

|  |  |
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|  | **COURSE OUTCOMES** |
| CO1 | Examine the international and Indian historical and cultural contexts of social psychology as a discipline. |
| CO2 | Investigate the theoretical framework that underpins social interaction and its connection to social identity. |
| CO3 | Relate theoretical knowledge to current and historic research insocial psychology to everyday issues such as interpersonal and relationships between groups. |
| CO4 | Recognize the characteristics, dynamics, and dimensions of interpersonal behavior. |
| CO5 | Learn the application of social psychology principles and ideas to address the various social challenges that exists in society, with a special focus on mental health in India. |
| CO6 | Comment on psychology behind Group Dynamics |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| --- | --- | --- | --- |
| **Course Code** | **21CR3026** | **Duration** | **3hrs** |
| **Course Title** | **CYBER PSYCHOLOGY** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | Analyze how the concept of ‘self’ is reshaped in cyberspace. Do anonymity and disinhibition influence the construction of online social identities? | CO4 | E | 10 |
|  | b. | Apply the idea of personality types in cyberspace by illustrating how introverted and extroverted individuals behave differently online. | CO4 | E | 10 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | i) Evaluate the development of cyber addiction as a psychological disorder.  ii) How has its diagnosis evolved over time? | CO5 | U | 10 |
|  | b. | Identify and explain the social, psychological, and biological risk factors that contribute to cyber addiction. | CO3 | A | 10 |
|  |  |  |  |  |  |
| 3. | a. | Compare and contrast two theoretical models explaining the development and maintenance of cyber addiction. List the strengths and limitations of each. | CO2 | E | 10 |
|  | b. | Describe the neurocognitive mechanisms that may underlie cyber addiction. How do these mechanisms support the assumptions of current models? | CO1 | A | 10 |
|  |  | **(OR)** |  |  |  |
| 4. |  | i) Analyze how cyber addiction manifests across different age groups—children, adolescents, adults, and elders.  ii) What unique challenges does each group face? | CO4 | E | 20 |
|  |  |  |  |  |  |
| 5. |  | i) Explain why age-specific strategies are important in preventing and managing cyber addiction.  ii) Suggest practical interventions for any two age groups. | CO2 | A | 20 |
|  |  |  |  |  |  |
|  |  | **(OR)** |  |  |  |
| 6. |  | i) Analyze the nature of cyber harassment and cyber victimization.  ii) List the psychological and social consequences for victims | CO4 | C | 20 |
|  |  |  |  |  |  |
| 7. |  | i) Discuss the preventive and legal measures available to address cyber harassment.  ii) Suggest improvements or reforms based on current trends. | CO2 | A | 20 |
|  |  | **(OR)** |  |  |  |
| 8. |  | i) Describe and evaluate the use of Motivational Interviewing and Cognitive Behaviour Therapy (CBT) in treating cyber addiction.  ii) These methods address the underlying causes - Justify | CO2 | E | 20 |
| **COMPULSORY QUESTION** | | | | | |
| 9. |  | i) Critically evaluate how cyber psychology explains the development, manifestation, and treatment of cyber addiction across different age groups and online activities.  ii) In your answer, discuss relevant theoretical models, neurocognitive mechanisms, types of cybercrimes, and evidence-based intervention strategies. | CO4 | E | 20 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

|  |  |
| --- | --- |
|  | **COURSE OUTCOMES** |
| CO1 | Define the concepts related to cyber space and cyber addiction |
| CO2 | Combine the theoretical models of the development and maintenance of cyber addiction |
| CO3 | Illustrate how cybercrimes affect different age groups and platforms |
| CO4 | Evaluate various forms of cyber crimes |
| CO5 | Combine various management technologies and treatment approaches |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| **Course Code** | **22FS2001** | **Duration** | **3hrs** |
| **Course Title** | **LABORATORY MANAGEMENT AND SAFETY** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | Discuss the classification of analytical chemical standards with examples. | CO1 | U | 10 |
|  | b. | Explain the following   1. Matrix effect 2. Internal standard 3. Relative potency 4. Cell culture | CO2 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | Explain the importance and requirements of quality management systems of laboratories. | CO3 | A | 10 |
|  | b. | Explain the quality management principles outlined in the ISO 9000 series of standards. | CO3 | A | 10 |
|  |  |  |  |  |  |
| 3. | a. | Explain the scope and advantages of NABL accreditation for laboratories. | CO3 | A | 10 |
|  | b. | Illustrate the various inspection and testing methods used in laboratories to ensure compliance with documented procedures. | CO3 | An | 10 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Interpret the salient features of inter- and intra-laboratory testing programs, including a forensic case study. | CO4 | A | 10 |
|  | b. | Explain the primary responsibilities of laboratory administration to ensure the efficient operation of a laboratory. | CO4 | A | 10 |
|  |  |  |  |  |  |
| 5. | a. | Discuss the different types of laboratories. | CO4 | U | 10 |
|  | b. | Explain the scope and importance of record management in enhancing laboratory efficiency and productivity. | CO4 | A | 10 |
|  |  | **(OR)** |  |  |  |
| 6. | a. | Explain the significance of evaluation and validation of LIMS. | CO5 | A | 10 |
|  | b. | Describe the different types of LIMS. | CO5 | U | 10 |
|  |  |  |  |  |  |
| 7. | a. | Write in detail on the various stages of the system development life cycle for a LIMS. | CO5 | A | 10 |
|  | b. | Explain the steps involved in implementing a Laboratory Information Management System. | CO5 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 8. | a. | Describe the various types of hazards, methods for identifying them, and the risk assessment process. | CO6 | U | 10 |
|  | b. | Write in detail on the safety policies of laboratory. | CO6 | A | 10 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Explain the following   1. Laboratory Safety 2. Laboratory Safety Plan 3. Personal Protective Equipment 4. Reference Materials | CO6 | U | 10 |
|  | b. | Explain the key components of Laboratory Standard Operating Procedures. | CO6 | An | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

|  |  |
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|  | **COURSE OUTCOMES** |
| CO1 | Summarize various chemical standards |
| CO2 | Summarize various biological standards |
| CO3 | Understand about the quality management systems |
| CO4 | Realize the importance of Laboratory Management |
| CO5 | Understand Laboratory Information Management system |
| CO6 | Apply the steps to maintain Laboratory safety |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| **Course Code** | **22FS2002** | **Duration** | **3hrs** |
| **Course Title** | **INSTRUMENTAL METHODS IN BIOLOGY** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | Define physiological solutions, their types, composition and their significance in biological and medical applications. | CO1 | R | 10 |
|  | b. | Describe the steps involved in the cell culture process and its forensic significance. | CO1 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | Write a short note on density gradient centrifugation and its role in biomolecular separation. | CO2 | R | 10 |
|  | b. | Discuss differential centrifugation and its applications in cell fractionation. | CO2 | U | 10 |
|  |  |  |  |  |  |
| 3. | a. | Write a short note on the immunochemical method used for protein assay. | CO3 | R | 10 |
|  | b. | Write a brief note on immobilized enzymes and their importance in biochemical applications. | CO3 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Explain the double immunodiffusion method and its role in antigen-antibody interaction studies. | CO4 | U | 10 |
|  | b. | Discuss the principle and applications of Radioimmunoassay (RIA). | CO4 | U | 10 |
|  |  |  |  |  |  |
| 5. | a. | Describe the cloning procedure in molecular biology and its significance. | CO5 | R | 10 |
|  | b. | Explain the methods used for isolating specific nucleic acid sequences. | CO5 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 6. | a. | Define culture media. Classify its types and describe their role in promoting microbial growth. | CO1 | R | 10 |
|  | b. | Evaluate the process of cell fractionation and its significance in biological research. | CO1 | An | 10 |
|  |  |  |  |  |  |
| 7. | a. | Explain the principle of centrifugation and its significance in biological research. | CO2 | An | 10 |
|  | b. | Write a brief note on the Complement Fixation Test and its diagnostic importance. | CO4 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 8. | a. | Distinguish between the Genomic library and CDNA library. | CO6 | An | 10 |
|  | b. | Explain Regulation of Gene Expression. | CO6 | U | 10 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Discuss the enzymes involved in the cloning process and their roles. | CO6 | U | 10 |
|  | b. | Write a short note on gene libraries and their applications in genetic research. | CO6 | R | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

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| --- | --- |
|  | **COURSE OUTCOMES** |
| CO1 | Demonstrate the basic techniques used in microbiology |
| CO2 | Summarize the principles of centrifugation techniques |
| CO3 | Review the techniques used in biochemistry |
| CO4 | Recall the principles of immunoassays |
| CO5 | Express the importance of cloning procedures. |
| CO6 | Analyze the methods involved in specific nucleic acid sequences. |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| **Course Code** | **23FS2002** | **Duration** | **3hrs** |
| **Course Title** | **INDIAN CONSTITUTION, FUNDAMENTAL LAWS AND PROCEDURE** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | **Explain the essential elements of a crime** and discuss how mens rea and actus reus contribute to criminal liability. | CO2 | R | 10 |
|  | b. | **Differentiate between the Civil law and Criminal law.** Provide examples to illustrate their key distinctions. | CO2 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | Explain ‘*bailable* and *non bailable offences’* with examples. | CO5 | An | 10 |
|  | b. | Analyze bodily offences with examples as per the BNS, quoting relevant sections. | CO5 | An | 10 |
|  |  |  |  |  |  |
| 3. | a. | Describe *expert opinion* and *burden of proof* citing relevant sections of law. | CO4 | U | 10 |
|  | b. | Discuss the procedure of arrest as per BNSS. | CO4 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Explain the procedure for search of a closed place as per the BNSS. | CO2 | A | 10 |
|  | b. | Explain ‘*examination in chief’,* ‘*cross examination’* and ‘*re-examination’.* | CO2 | A | 10 |
|  |  |  |  |  |  |
| 5. | a. | Define the different types of ‘*writs’* with examples*.* | CO3 | U | 10 |
|  | b. | Explain the fundamental rights of an Indian citizen as per the constitution. | CO3 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 6. | a. | Evaluate the “*Directive Principles of State Policy”* as per the Indian Constitution. | CO5 | E | 10 |
|  | b. | Justify the effectiveness of Environmental Protection Act, 1986 in controlling industrial pollution in India. | CO5 | E | 10 |
|  |  |  |  |  |  |
| 7. | a. | Explain the impact of Wildlife Protection Act, 1972 on the conservation of endangered species in India. | CO6 | A | 10 |
|  | b. | Explain the strengths and weaknesses of the POCSO Act, 2012 in ensuring child friendly procedures during investigation and trial. | CO6 | A | 10 |
|  |  | **(OR)** |  |  |  |
| 8. | a. | Analyze how effective the POCSO Act, 2012 is in addressing child sexual abuse in India. | CO4 | An | 10 |
|  | b. | Discuss the impact of NDPS Act, 1985 in controlling drug trafficking and substance abuse in India. | CO4 | An | 10 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Discuss the evils of dowry and role of Dowry Prohibition Act, 1961 in curbing the criminality. | CO4 | A | 10 |
|  | b. | Explain the role of IT Act, 2000 in preventing cyber-crimes and the punishments cited under this Act. | CO4 | A | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

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|  | **COURSE OUTCOMES** |
| CO1 | Discuss various types of crime laws |
| CO2 | Illustration sections to Indian Penal Code |
| CO3 | Summaries sections related to Indian Evidence Act |
| CO4 | Focus on the articles of Indian Constitution |
| CO5 | Recognize social crimes and their causes |
| CO6 | Recommend amendments in the governing laws |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| **Course Code** | **23FS2003** | **Duration** | **3hrs** |
| **Course Title** | **FORENSIC PHYSICS** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | Illustrate the anatomy of human vocal cords and their role in voice production. | CO1 | A | 6 |
|  | b. | Discuss the forensic significance of voice analysis in speaker identification. | CO1 | U | 14 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | Differentiate between speaker identification and speaker authentication with examples. | CO1 | An | 5 |
|  | b. | Explain forensic phonetics and its application in forensic investigations. | CO1 | A | 15 |
|  |  |  |  |  |  |
| 3. | a. | Assess the role of eyewitness accounts in vehicular accident investigations. | CO1 | E | 15 |
|  | b. | Justify how tire marks and pedestrian impacts can help determine vehicle speed. | CO1 | E | 5 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Determine the reaction time and time-distance analysis in accident investigations. | CO2 | A | 6 |
|  | b. | Appraise the role of vehicular accident photography in forensic investigations. | CO2 | E | 14 |
|  |  |  |  |  |  |
| 5. | a. | Explain the relevant provisions of the Motor Vehicle Act, 1988 concerning accidents. | CO3 | U | 6 |
|  | b. | Discuss the sections of the IPC (337, 304A, 279) related to vehicular accidents. | CO3 | U | 14 |
|  |  | **(OR)** |  |  |  |
| 6. | a. | Examine the legal implications of high-speed photography and its role in accident investigations. | CO3 | A | 14 |
|  | b. | Explain the forensic significance of surveillance and aerial photography in accident investigations. | CO3 | A | 6 |
|  |  |  |  |  |  |
| 7. | a. | Differentiate between a 35mm film camera and a digital SLR camera in forensic investigations. | CO4 | An | 5 |
|  | b. | Analyse how light, angle, and depth of field impact photo imaging evidence. | CO4 | An | 15 |
|  |  | **(OR)** |  |  |  |
| 8. |  | Illustrate the various methods of developing a perfect forensic photograph and their significance. | CO4 | An | 20 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Compare the different tool marks and explain their classification with examples. | CO5 | An | 10 |
|  | b. | Compare different methods of restoring erased or obliterated marks in forensic investigations. | CO6 | E | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

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|  | **COURSE OUTCOMES** |
| CO1 | Understand the physics of sound production |
| CO2 | Apply phonetics and voice analysis in Forensic Science, |
| CO3 | Understand the causes and investigations done in vehicular accidents |
| CO4 | Explain the legal provisions about forensic photography |
| CO5 | Interpret the various methods of photographing a crime scene etc. |
| CO6 | Describe the various tool marks |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| **Course Code** | **23FS2008** | **Duration** | **3hrs** |
| **Course Title** | **QUESTIONED DOCUMENTS** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | Define questioned documents and explain their significance in forensic investigations. | CO1 | R | 10 |
|  | b. | Explain the process of preliminary examination of questioned documents. | CO1 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | Explain the use of ultraviolet, visible, infrared in forensic document examination. | CO2 | U | 10 |
|  | b. | Explain the applications of a visible spectral comparator in forensic investigations. | CO2 | A | 10 |
|  |  |  |  |  |  |
| 3. | a. | Explain the principles of handwriting identification and the role of individual characteristics in forensic analysis. | CO3 | U | 10 |
|  | b. | Explain the methods of collecting standards for handwriting comparison and their importance in forensic investigations. | CO3 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Discuss the different types of document alterations, including erasures, additions, overwriting, and obliterations. | CO4 | U | 10 |
|  | b. | Explain the techniques used to identify indented and invisible writings in forensic document examination. | CO4 | A | 10 |
|  |  |  |  |  |  |
| 5. | a. | Explain the methods used in the examination of counterfeit Indian currency notes. | CO5 | An | 10 |
|  | b. | Enumerate the various class characteristics of typewritten documents. | CO4 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 6. | a. | Explain in detail the working principle of ESDA. Give its few applications in forensic document examination. | CO2 | R | 10 |
|  | b. | Discuss in detail decipherment of charred documents. | CO4 | U | 10 |
|  |  |  |  |  |  |
| 7. | a. | Discuss in detail various types of impact and non-impact printers. | CO4 | R | 10 |
|  | b. | Explain the examination of rubber stamps, seals, and mechanical impressions in forensic document analysis. | CO3 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 8. | a. | List the significance of the following document examination tools:   1. Stereomicroscope 2. Comparison microscope 3. Graticule 4. TLC 5. Magnifying glass | CO6 | R | 10 |
|  | b. | Enumerate various class characteristics of handwriting with examples. | CO2 | R | 10 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Explain the role of forensic document examiners in identifying alterations in questioned documents. | CO6 | An | 10 |
|  | b. | Discuss in detail signature forgeries with its types and methods for detections. | CO3 | U | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

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|  | **COURSE OUTCOMES** |
| CO1 | Identify the correct method to examine the questioned documents |
| CO2 | Apply various method to analyze questioned documents |
| CO3 | Compare the questioned documents with standards |
| CO4 | Adopt appropriate methods to analyze the questioned documents of various types |
| CO5 | Assess the security features of security documents |
| CO6 | Recommend innovative techniques to analyze counterfeited documents |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| **Course Code** | **23FS2009** | **Duration** | **3hrs** |
| **Course Title** | **FORENSIC BALLISTICS** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | Illustrate the role of rifling in a rifle and label its different parts with a neat diagram. | CO1 | An | 15 |
|  | b. | Compare the accuracy and range of Rifle and shotgun. | CO1 | An | 5 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | Examine the key factors influencing the internal ballistics of a firearm. | CO1 | R | 15 |
|  | b. | Compare the projectiles used in rifles and shotguns with a neat diagram. | CO1 | An | 5 |
|  |  |  |  |  |  |
| 3. | a. | Write a note on design of centre fire cartridge with a neat diagram. | CO2 | A | 15 |
|  | b. | Discuss the advantages of centrefire cartridge. | CO2 | U | 5 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Describe the metallic cartridge, its components, and their functions. | CO2 | U | 15 |
|  | b. | Define ammunition and provide relevant examples. | CO2 | R | 5 |
|  |  |  |  |  |  |
| 5. |  | Explain in detail the different types of country-made firearms, including their design, functionality, usage and identification in forensic analysis. | CO3 | U | 20 |
|  |  | **(OR)** |  |  |  |
| 6. |  | Explain the role and applications of the Automatic Ballistic Identification System (ABIS). | CO3 | U | 20 |
|  |  |  |  |  |  |
| 7. |  | Compare GSR analysis using SEM and EDX, highlighting their advantages and disadvantages. | CO4 | An | 20 |
|  |  | **(OR)** |  |  |  |
| 8. |  | Compare different methods for collecting Gunshot Residue (GSR) from a crime scene. | CO4 | An | 20 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Differentiate entry and exit wound in case of Rifle. | CO5 | An | 10 |
|  | b. | Describe the wound characteristics of Rifle shooting at contact and close range. | CO6 | U | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

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|  | **COURSE OUTCOMES** |
| CO1 | Memorize the detailed classification of firearms. |
| CO2 | Distinguish types of ammunition and head stamp markings on ammunition. |
| CO3 | Examine various kinds of firing marks. |
| CO4 | Evaluate the types of firearm evidences. |
| CO5 | Predict the mechanism of formation of gunshot residues. |
| CO6 | Infer the nature of fireman injuries. |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| **Course Code** | **23FS2034** | **Duration** | **3hrs** |
| **Course Title** | **RECENT TRENDS IN FORENSIC SCIENCE** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (10 X 1 = 10 MARKS)** | | | | | |
| 1. | Define dactylography. | | CO3 | R | 1 |
| 2. | Analyze the role of a forensic serologist. | | CO5 | An | 1 |
| 3. | Define forensic toxicology. | | CO4 | R | 1 |
| 4. | Name the basic types of fingerprints. | | CO3 | R | 1 |
| 5. | Define poison. Give an example. | | CO3 | R | 1 |
| 6. | Who proposed “principle of exchange”? | | CO1 | R | 1 |
| 7. | Describe the term cybercrime. | | CO6 | U | 1 |
| 8. | Define the term forgery. | | CO3 | R | 1 |
| 9. | Explain the purpose of chain of custody. | | CO2 | U | 1 |
| 10. | Define the term forensic ballistics. | | CO1 | R | 1 |
| **PART – B (6 X 3 = 18 MARKS)** | | | | | |
| 11. | Give the significance of forensic science laboratories in criminal investigations. | | CO1 | U | 3 |
| 12. | Differentiate between outdoor and indoor crime scene. | | CO2 | R | 3 |
| 13. | Evaluate the role of sketching in crime scene documentation. | | CO3 | An | 3 |
| 14. | Identify which is a toxin and which is a poison between snake venom and cyanide, and explain the difference. | | CO4 | An | 3 |
| 15. | Enumerate the principles of forensic science. | | CO1 | R | 3 |
| 16. | Enumerate the CFSLs in India. | | CO1 | R | 3 |
| **PART – C (6 X 12 = 72 MARKS)**  **(Answer any five Questions from Q. No. 17 to 23, Q. No. 24 is Compulsory)** | | | | | |
| 17. | a. | Explain the branches of forensic science and its evolution in criminal investigations. | CO1 | U | 6 |
|  | b. | Define crime. Explain in detail the causes and consequences of crime. | CO1 | R | 6 |
|  |  |  |  |  |  |
| 18. | a. | Explain in detail the significance of dactylography in forensics. | CO3 | U | 6 |
|  | b. | Discuss in detail the preliminary examination of documents. | CO3 | U | 6 |
|  |  |  |  |  |  |
| 19. | a. | Explain the various types of drugs. | CO4 | R | 6 |
|  | b. | Define BAC. Explain the techniques to detect BAC. | CO4 | R | 6 |
|  |  |  |  |  |  |
| 20. | a. | Examine the role of blood as crucial evidence in forensic examination. | CO5 | A | 6 |
|  | b. | Discuss the structure of DNA. Explain the role of DNA in crime investigation. | CO5 | U | 6 |
|  |  |  |  |  |  |
| 21. | a. | Explain in detail the various types of cybercrimes. | CO6 | U | 6 |
|  | b. | Discuss the various elements of crime. | CO2 | U | 6 |
|  |  |  |  |  |  |
| 22. | a. | Define the following terms with respect to Indian Judiciary:   1. BNS 2. BNSS 3. BSA | CO1 | R | 6 |
|  | b. | Examine the role of forensic expert in criminal investigation. | CO1 | An | 6 |
|  |  |  |  |  |  |
| 23. | a. | Explain master pattern of document examination. | CO3 | U | 6 |
|  | b. | Explain patent and latent fingerprints. Discuss the methods of developing latent fingerprints. | CO3 | U | 6 |
| **COMPULSORY QUESTION** | | | | | |
| 24. | a. | Explain the importance of crime scene protection and proper evidence collection. | CO2 | An | 6 |
|  | b. | Analyze the impact of drug influence in crime. | CO2 | A | 6 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

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|  | **COURSE OUTCOMES** |
| **CO1** | Memorize the basic concepts of forensic science. |
| **CO2** | Assess the procedures involved in Crime scene management |
| **CO3** | Evaluate the importance of analysis of Fingerprints and Questioned documents |
| **CO4** | Classify the various types of toxins and their analysis as per the nature of crime. |
| **CO5** | Summarize the importance of Forensic Serology. |
| **CO6** | Illustrate the Industrial Forensic and Cybercrimes. |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| **Course Code** | **23FS3005** | **Duration** | **3hrs** |
| **Course Title** | **FORENSIC PSYCHOLOGY** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | Recall the concepts of attention and perception. | CO1 | R | 10 |
|  | b. | Write a summary of narcoanalysis and polygraph. | CO1 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | Summarize the different types of mental disorders. | CO2 | U | 10 |
|  | b. | Classify the different personality disorders. | CO2 | U | 10 |
|  |  |  |  |  |  |
| 3. | a. | Identify the personality theory from the given image and explain it. Name the test that is specifically based on this theory.  Big 5 Personality Traits: The 5-Factor Model of Personality | CO3 | A | 10 |
|  | b. | Explain civil and criminal responsibility. | CO3 | A | 10 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Explain MMPI. | CO4 | An | 10 |
|  | b. | Distinguish between achievement and aptitude tests. | CO4 | An | 10 |
|  |  |  |  |  |  |
| 5. | a. | Explain the given image. What information can you derive from the image? Explain each variable.  Table 2 from Validation of the MMPI-2_RF's RC3 Cynicism Scale | Semantic  Scholar | CO5 | E | 10 |
|  | b. | i) Select appropriate match:   |  | | --- | | Extraversion Lack empathy | |  | | Introversion Periods of unusually intense emotions | |  | | Bipolar disorder Enjoys group work | |  | | Narcissist Self reliant |   ii) Explain the extraversion and introversion traits of personality. | CO5 | E | 10 |
|  |  | **(OR)** |  |  |  |
| 6. | a. | Explain the Rorschach test in detail. | CO6 | U | 10 |
|  | b. | Elaborate on brain fingerprinting. | CO6 | R | 10 |
|  |  |  |  |  |  |
| 7. | a. | Explain BEOS. | CO3 | R | 10 |
|  | b. | Explain different psychological assessments. | CO2 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 8. | a. | Summarize the forensic significance of psychological tests. | CO5 | U | 10 |
|  | b. | Describe Insanity defense as a defense in court. | CO5 | R | 10 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Explain all techniques of deception. | CO4 | C | 10 |
|  | b. | Compare polygraph and narcoanalysis. | CO2 | U | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

|  |  |
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|  | **COURSE OUTCOMES** |
| CO1 | Record the basics of Forensic Psychology |
| CO2 | Explain ethical issues in forensic psychology |
| CO3 | Interpret the significance of psychological assessment. |
| CO4 | Focus the principles of polygraph |
| CO5 | Consider the procedure for narconalaysis |
| CO6 | Plan general procedure for conducting BEOS profiling |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| **Course Code** | **23FS3006** | **Duration** | **3hrs** |
| **Course Title** | **FORENSIC PHYSICS AND ADVANCE BALLISTICS** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | Define skid marks. Explain types of skid marks and give its significance. | CO1 | R | 10 |
|  | b. | Explain different types of transportation disaster. | CO1 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | Describe the biological and physical properties of human blood that influence bloodstain patterns. | CO2 | U | 10 |
|  | b. | Explain the process of determining the Point of Convergence and Point of Origin in BPA. | CO2 | A | 10 |
|  |  |  |  |  |  |
| 3. | a. | Discuss the formation, types, and composition of soil relevant to forensic investigations. | CO3 | U | 10 |
|  | b. | Define tool marks. Give class and individual characteristics of tool marks with examples. | CO3 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Discuss the history of firearms. | CO4 | R | 10 |
|  | b. | What are proof marks on weapons? How do they help in firearm identification? | CO4 | A | 10 |
|  |  |  |  |  |  |
| 5. | a. | What is ricochet? Explain its effects on bullet trajectory and forensic analysis. | CO5 | An | 10 |
|  | b. | Explain the terminal effects of a bullet based on its shape, striking velocity, and target nature. | CO5 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 6. | a. | Write a note on improvised firearms. | CO4 | U | 10 |
|  | b. | Give the classification of fiber with example. Explain its forensic significance. | CO3 | U | 10 |
|  |  |  |  |  |  |
| 7. | a. | Discuss the factors affecting the internal ballistics. | CO4 | A | 10 |
|  | b. | Explain the shapes of propellants. | CO4 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 8. | a. | How is the chain of custody maintained and documented in a forensic ballistics report? | CO6 | U | 10 |
|  | b. | Explain the importance of accuracy and clarity in forensic ballistics report writing. | CO6 | U | 10 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Describe the key components and structure of a forensic ballistics report. | CO6 | R | 10 |
|  | b. | What challenges do forensic experts face when preparing ballistics reports, and how can they ensure the reliability of their findings? | CO6 | An | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

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|  | **COURSE OUTCOMES** |
| CO1 | Examine the fundamental principles of handling physical evidence. |
| CO2 | Illustrate the physics of blood. |
| CO3 | Determine various types of crime scene materials relevance to Forensic Ballistics. |
| CO4 | Classify the different types of firearms. |
| CO5 | Distinguish between, internal, external and terminal ballistics. |
| CO6 | Collaborate the procedure of writing ballistic report. |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| **Course Code** | **23FS3007** | **Duration** | **3hrs** |
| **Course Title** | **FINGER PRINTS AND OTHER IMPRESSIONS** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | Describe various types of fingerprint patterns. | CO1 | R | 10 |
|  | b. | Explain the henry’s classification of fingerprint. | CO1 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | Explain the following –   1. WCDX Extension 2. Biological basis of fingerprints | CO1 | U | 10 |
|  | b. | Explain various types of minutiae and how they are used as third level of classification. | CO1 | U | 10 |
|  |  |  |  |  |  |
| 3. | a. | Describe the earlier powders used for fingerprint development. | CO2 | U | 10 |
|  | b. | Explain the amino acid specific reagents used for fingerprint development. | CO2 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Illustrate the silver nitrate method for fingerprint development. | CO2 | R | 10 |
|  | b. | Describe the lipid specific reagents used for fingerprint development. | CO2 | R | 10 |
|  |  |  |  |  |  |
| 5. | a. | Describe the vacuum metal deposition method for fingerprints. | CO3 | U | 10 |
|  | b. | Explain the development of fingerprints on gloves. | CO3 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 6. | a. | Explain the lifting methods that are used for the preservation of foot prints. | CO4 | R | 10 |
|  | b. | Explain the following –   1. Sidewall information 2. Types of footwear marks 3. Significance of footprints | CO4 | U | 10 |
|  |  |  |  |  |  |
| 7. | a. | Explain the concept of digital imaging. | CO5 | U | 10 |
|  | b. | What is AFIS? Explain the components of AFIS System. | CO5 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 8. | a. | Elaborate the following –   1. Ridge counting 2. Ridge tracing 3. Principle of fingerprints | CO6 | R | 10 |
|  | b. | Explain the powder method of fingerprint development. | CO3 | R | 10 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Explain the procedure for recovering ear prints at a crime scene. | CO6 | U | 10 |
|  | b. | Describe the classification of lip prints. | CO6 | U | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

|  |  |
| --- | --- |
|  | **COURSE OUTCOMES** |
| CO1 | Identify the various elements of fingerprints. |
| CO2 | Distinguish the types of reprints. |
| CO3 | Analyze different types of prints such as footprints, tyre prints, lip prints etc. |
| CO4 | Apply various methods to collect and analyze prints. |
| CO5 | Recommend new procedures for proper collection and analysis of prints. |
| CO6 | Develop novel methods for the development of prints. |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

|  |  |  |  |
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| **Course Code** | **23FS3016** | **Duration** | **3hrs** |
| **Course Title** | **FORENSIC DNA TYPING** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | Describe the different types of chromosomes and their characteristics. | CO1 | R | 10 |
|  | b. | Explain the different chromosome banding patterns and their significance | CO1 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | Describe the Organic (Phenol-Chloroform) extraction method for DNA and explain its procedure in detail. | CO2 | R | 10 |
|  | b. | Examine the process of Amplified Fragment Length Polymorphism (AFLP) and its role in DNA analysis. | CO2 | An | 10 |
|  |  |  |  |  |  |
| 3. | a. | Define Short Tandem Repeat (STR) markers and explain their structure and types. | CO3 | R | 10 |
|  | b. | Describe the interpretation of DNA profiles in cases involving mixture DNA samples from sexual assault case. | CO3 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Enumerate the ethical considerations involved in post-conviction DNA analysis. | CO4 | R | 10 |
|  | b. | Describe the process of STR analysis and its role in forensic DNA profiling. | CO4 | R | 10 |
|  |  |  |  |  |  |
| 5. | a. | Discuss the mt-DNA cytochrome b gene and mt-DNA COI gene, highlighting their importance. | CO5 | R | 10 |
|  | b. | Write a brief note on DNA databases and their role in forensic science. | CO5 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 6. | a. | Enumerate the various forms of DNA and their structural differences. | CO1 | R | 10 |
|  | b. | Discuss polytene and lampbrush chromosomes, highlighting their structure and functions. | CO1 | U | 10 |
|  |  |  |  |  |  |
| 7. | a. | Explain the Differential DNA extraction method and discuss its significance. | CO2 | U | 10 |
|  | b. | Discuss the process of Restriction Fragment Length Polymorphism (RFLP) and its significance. | CO2 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 8. | a. | List the factors that complicate STR analysis and explain their impact on DNA profiling. | CO6 | R | 10 |
|  | b. | Analyze the STR profile data provided in the table, compare the DNA profiles, and determine whether John Doe or Mark Smith matches the DNA found at the crime scene. | CO6 | An | 10 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Write a detailed note on the Likelihood Ratio (LR) in STR analysis, incorporating the given example where the crime scene DNA and suspect DNA share alleles 14 and 18, with allele frequencies f(14) = 0.05 and f(18) = 0.08. Include calculations and interpretations of the LR value. | CO6 | E | 10 |
|  | b. | A blood sample recovered from a homicide crime scene was analyzed using STR analysis. As a forensic DNA analyst, prepare a forensic report that includes:   * Case Details (crime type, date, location) * Sample Collected (source of DNA evidence) * Method Used (STR analysis technique) * DNA Profile Comparison (analyzing and matching profiles) * Conclusion (determine if the DNA matches John Doe or Mark Smith and justify your findings) | CO6 | E | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

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|  | **COURSE OUTCOMES** |
| CO1 | Outline the basic structure of DNA. |
| CO2 | Distinguish various methods of DNA extraction. |
| CO3 | Implement the concepts of STR and STR analysis for paternity testing. |
| CO4 | Determine admissibility of DNA evidence in court. |
| CO5 | Compare different genetic markers and their forensic significance in establishing the paternity. |
| CO6 | Prepare a forensic report. |

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**END SEMESTER EXAMINATION – MAY / JUNE 2025**

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| --- | --- | --- | --- |
| **Course Code** | **23FS3017** | **Duration** | **3hrs** |
| **Course Title** | **FORENSIC ANTHROPOLOGY, ODONTOLOGY AND BITEMARK ANALYSIS** | **Max. Marks** | **100** |

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| **Q. No.** | **Questions** | | **CO** | **BL** | **M** |
| **PART – A (4 X 20 = 80 MARKS)**  **(Answer all the Questions)** | | | | | |
| 1. | a. | Explain the role of taphonomy in forensic anthropology and its contribution to determining the time and cause of death of human remains. | CO1 | U | 10 |
|  | b. | Discuss facial reconstruction in forensic anthropology, its use in identifying unknown individuals, and the limitations of the technique. | CO1 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 2. | a. | Describe the forensic significance of the pelvis in sex determination, focusing on key anatomical differences between male and female pelvic bones. | CO2 | R | 10 |
|  | b. | Describe the technique of skull photo superimposition and its use in forensic identification. | CO2 | R | 10 |
|  |  |  |  |  |  |
| 3. | a. | Define forensic odontology and its scope in personal identification, including its application in criminal investigations. | CO3 | R | 10 |
|  | b. | Explain the basic structure of human teeth and types of dentitions, focusing on how tooth morphology aids in the identification process. | CO3 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 4. | a. | Discuss the Gustafson method for age determination using dental evidence. | CO4 | R | 10 |
|  | b. | Discuss dental trauma and its forensic application. | CO4 | U | 10 |
|  |  |  |  |  |  |
| 5. | a. | Discuss in detail the ABFO guidelines for collection of bitemark evidence from bite-site and suspect human-bite. | CO5 | R | 10 |
|  | b. | Discuss the different types of bite-marks, highlighting distinguishing features of human bite-marks compared to those of animals or other sources. | CO5 | R | 10 |
|  |  | **(OR)** |  |  |  |
| 6. | a. | Provide the dental formulas for the following:   1. Adult human dentition 2. Primary dentition 3. Dog 4. Elephant 5. Cow | CO5 | R | 10 |
|  | b. | Evaluate the reliability of bite-mark evidence in criminal cases, highlighting the challenges, controversies, and how experts address these issues in court. | CO6 | An | 10 |
|  |  |  |  |  |  |
| 7. | a. | Discuss the role of forensic odontology in mass disaster victim identification, focusing on the comparison of ante-mortem and postmortem dental records. | CO3 | U | 10 |
|  | b. | Describe the role of DNA isolation from bones and teeth in forensic identification. | CO4 | U | 10 |
|  |  | **(OR)** |  |  |  |
| 8. | a. | Describe the late decomposition changes that occur in a dead body. | CO1 | U | 10 |
|  | b. | Describe the various methods used in age determination from teeth in forensic odontology. | CO2 | U | 10 |
| **COMPULSORY QUESTION** | | | | | |
| 9. | a. | Enumerate the **bilateral anatomical landmarks** of the human skull used in forensic facial reconstruction. Illustrate with a schematic diagram. | CO1 | R | 10 |
|  | b. | Explain in detail the various stages of bone weathering and its significance in taphonomy. | CO1 | A | 10 |

**CO** – COURSE OUTCOME **BL** – BLOOM’S LEVEL **M** – MARKS ALLOTTED

|  |  |
| --- | --- |
|  | **COURSE OUTCOMES** |
| CO1 | Identify theories of anthropology. |
| CO2 | Differentiate living and dead person through anthropological evidences. |
| CO3 | Illustrate forensic odontology and its significance. |
| CO4 | Select different methods and techniques used in forensic odontology. |
| CO5 | Assess types of bite marks. |
| CO6 | Infer factors affecting bite mark analysis. |