

**FIRST SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY)  
EXAMINATION, NOVEMBER 2021**

(CBCSS)

Forensic Science

**FSC 1C 04—LABORATORY QUALITY MANAGEMENT, RESEARCH METHODOLOGY  
AND STATISTICS**

(2020 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

**General Instructions**

1. *In cases where choices are provided, students can attend all questions in each section.*
2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*
3. *The instruction if any, to attend a minimum number of questions from each sub section / sub part / sub division may be ignored.*
4. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

**Section A**

I. Answer any *four* of the following (Short Answer Type Questions) (Weightage : 2) :

- 1 Enumerate the various National and International Accreditation agencies/boards for ensuring quality control of laboratories.
- 2 Explain briefly what is meant by certified reference materials.
- 3 Explain briefly what is meant by laboratory information management system.
- 4 Explain what is meant by a "research hypothesis".
- 5 Explain what is meant by the "impact factor" of a research journal.
- 6 Write briefly on how to conduct a "literature search".
- 7 Explain what is meant by "internal quality audit".

(4 × 2 = 8 weightage)

**Section B**

II. Answer any *four* of the following (Short Essay Type Questions) (Weightage : 3) :

- 8 Explain what is meant by "validation" and "verification".
- 9 Describe the NABL guidelines for laboratory accreditation in India.

**Turn over**

- 10 Explain how you would design a “tool” for data collection.
- 11 Explain how you would design a poster for presenting in a conference.
- 12 Explain the concept of frequency distribution of data.
- 13 Explain what is meant by median in statistics. Illustrate with an example.
- 14 Explain the concept of “standard deviation” in statistics.

(4 × 3 = 12 weightage)

### Section C

III. Answer any *two* of the following (Long Essay Type Questions) (Weightage : 5) :

- 15 Explain the principles of Inter and intra laboratory testing programmes.
- 16 Explain what is meant by Intellectual property rights.
- 17 Explain the concept of regression analysis and explain what it can be used for.
- 18 Enumerate and explain the five types of errors that can happen in various scientific studies.

(2 × 5 = 10 weightage)

**FIRST SEMESTER M.A./M.Sc. DEGREE (REGULAR) EXAMINATION  
NOVEMBER 2020/2021**

(CBCSS)

Forensic Science

FSC 1C 03—INSTRUMENTAL TECHNIQUES

(2020 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

**General Instructions**

1. *In cases where choices are provided, students can attend all questions in each section.*
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I. Answer any *four* of the following. Short answer type questions :

- 1 Explain briefly the general properties of Electromagnetic radiations.
- 2 Explain briefly the principle of Atomic absorption spectroscopy.
- 3 Explain briefly the general principle of electrophoresis.
- 4 Briefly describe the basic principles of microscopy.
- 5 Write briefly on the principle of chromatography.
- 6 Write briefly on the theory of IR Absorption.
- 7 Explain what is meant by internal ballistics.

(4 × 2 = 8 weightage)

II. Answer any *four* of the following. Short essay type questions :

- 8 Write a note on the applications of FT-IR.
- 9 Explain the working and applications of X Ray-spectroscopy.

**Turn over**

- 10 Explain the use of HPLC in analyzing petroleum adulteration.
- 11 Explain the working and applications of a comparison microscope. Add a note on the role of the optical bridge in the working of the comparison microscope.
- 12 Explain how fingerprint recovery is made from the surface of firearms.
- 13 Explain how you would test for the presence of methanol in a sample of Ethanol submitted for analysis.
- 14 Explain the principle behind and the applications of UV Spectroscopy.

(4 × 3 = 12 weightage)

III. Answer any *two* of the following. Long essay type questions :

- 15 Explain the principle of Nuclear Magnetic Resonance Spectroscopy and its applications.
- 16 Describe the principles of detection and analysis of gunshot residues.
- 17 Explain the working of scanning and transmission Electron Microscopes and their applications.
- 18 Write an essay on the basic principles of sedimentation. Add a note on various types of centrifuges and their application.

(2 × 5 = 10 weightage)

**FIRST SEMESTER M.A./M.Sc. DEGREE (REGULAR) EXAMINATION  
NOVEMBER 2020/2021**

(CBCSS)

Forensic Science

FSC 1C 02—CRIMINOLOGY AND FORENSIC PSYCHOLOGY

(2020 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

**General Instructions**

1. *In cases where choices are provided, students can attend all questions in each section.*
2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*
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**Part A (Short Answer Type Questions)**

I. Answer any *four* of the following. Weightage 2 :

- 1 Explain briefly what is meant by crime ?
- 2 Describe briefly what is meant by “intimate partner violence”.
- 3 Describe briefly the mental effects that a crime can have on a victim.
- 4 Briefly describe the structure of Police in Kerala.
- 5 Write briefly on “Non-bailable offences”.
- 6 Write briefly on “subpoena”.
- 7 Write briefly on the powers of Sessions Courts.

(4 × 2 = 8 weightage)

**Turn over**

**Part B (Short Essay Type Questions)**

II. Answer any *four* of the following. Weightage 3 :

- 8 Explain what are “hate crimes”.
- 9 Explain the “retributive theory” of punishment.
- 10 Explain the concept of “crime pattern analysis”.
- 11 What are the “types of victims” according to Benjamin Mendelsohn ?
- 12 Explain how criminals are identified using the “technique of “Portrait Parle” ?
- 13 Write a note on the importance of “crime statistics”.
- 14 Write a note on “community based rehabilitation centres”.

(4 × 3 = 12 weightage)

**Part C (Long Essay Type Questions)**

III. Answer any *two* of the following. Weightage 5 :

- 15 Write an essay on child abuse.
- 16 Explain what is the role of probation and parole.
- 17 Explain what is meant by “dying declaration” and how should it be recorded ?
- 18 Write an essay on “Forensic Behavioural Analysis”.

(2 × 5 = 10 weightage)

**FIRST SEMESTER M.A./M.Sc. DEGREE (REGULAR) EXAMINATION  
NOVEMBER 2020/2021**

(CBCSS)

Forensic Science

FSC 1C 01—FUNDAMENTALS OF FORENSIC SCIENCE AND CRIMINAL LAWS  
(2020 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

**General Instructions**

1. *In cases where choices are provided, students can attend all questions in each section.*
2. *The minimum number of questions to be attended from the Section/Part shall remain the same.*
3. *The instruction if any, to attend a minimum number of questions from each sub section/sub part/sub division may be ignored.*
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**Part A**

I. Answer any *four* of the following (Short Answer Type Questions) (Weightage-2) :

- 1 What is meant by Forensic Science and what is its role in the criminal justice system ?
- 2 Explain briefly what is meant by evidence.
- 3 Describe briefly the organizational structure of Forensic Science laboratories in Kerala.
- 4 Briefly describe the method of transfer of evidence from scene to laboratory.
- 5 Write briefly on S. 32 IE A.
- 6 Write briefly on S. 14 of the Indian Constitution.
- 7 Write briefly on collection of fingerprint evidence.

(4 × 2 = 8 weightage)

II. Answer any *four* of the following (Short Essay Type Questions) (Weightage-3) :

- 8 Explain what are the functions of a forensic scientist working in a forensic science laboratory.
- 9 Explain the principles involved in comparison of evidence, between known and questioned items.

**Turn over**

- 10 Write briefly on S. 299 IPC.
- 11 What are the powers of a “food inspector” as defined under the Prevention of food adulteration act ?
- 12 What is Meant by “Aggravated sexual assault” as defined under the POCSO Act ?
- 13 Explain what is meant by “impression evidences”.
- 14 When can an electronic signature be “legally recognised” as per the IT act ?

(4 × 3 = 12 weightage)

III. Answer any *two* of the following (Long Essay Type Questions) (Weightage-5) :

- 15 Explain the principles of handwriting identification / authentication in the context of questioned documents analysis.
- 16 Explain what is a crime scene and explain the procedure of sketching a crime scene.
- 17 Explain the concept of “chain of custody” in the context of handling of evidence.
- 18 Explain the concept of “admissibility of Scientific Evidence”.

(2 × 5 = 10 weightage)



**FIRST SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2021****(CCSS)****Forensic Science****FSC 1C 02—CRIME AND CRIMINAL JUSTICE SYSTEM****(2019 Admissions)****Time : Three Hours****Maximum : 80 Marks****I. Write an essay on any *two* of the following :**

- 1 "A Child (Juvenile) is the future of every society" discuss the nature and types of Children in conflict with Law.
- 2 Discuss the validity of the 'Differential Association Theory' in the current day society. Add your comments in favour or against it.
- 3 Discuss the types of victims. Add a critical note on the Victim in the Criminal Justice System.
- 4 Elucidate the various theories of Punishment and evaluate their advantages and drawbacks.

**(2 × 15 = 30 marks)****II. Write short essay on any *three* of the following :**

- 5 Discuss the factors that are responsible for Drug Abuse in India.
- 6 Elucidate the role of Economic Determinism in the causation of crime, as proposed by W.A. Bonger.
- 7 What is Probation ? How does it differ from Parole ?
- 8 Describe the role of the prosecution. Add a note on the role and the authority of the Prosecution bodies in India.
- 9 What is an FIR ? How does it differ from a 'Complaint' ? Add a note on the Importance of FIR.

**(3 × 10 = 30 marks)****III. Write short notes on any *five* of the following :**

- 10 Give the various types of Juvenile Correctional Institutions.
- 11 What or who is a 'Criminaloid' ? Give the basis for this.
- 12 Give in brief the defects in the personality that leads to criminality.
- 13 Elucidate the Containment theory.
- 14 What are Human Rights ? How do police act as the protector of Human Rights ?
- 15 What is Dying Declaration ? Give its importance.
- 16 What is an Inquest ? Give its types.
- 17 List out the types of punishments used in India.

**(5 × 4 = 20 marks)**

**FIRST SEMESTER P.G. DEGREE EXAMINATION, NOVEMBER 2021**

(CCSS)

Forensic Science

FSC 1C 01—FUNDAMENTALS OF FORENSIC SCIENCE AND CRIMINAL LAWS

(2019 Admissions)

Time : Three Hours

Maximum : 80 Marks

I. Write an essay on any *two* of the following :

- 1 What is Forensic Science ? Describe its scope and add a note on the need of forensic science.
- 2 When can a police officer arrest a person without a warrant or an order of the Court, as laid down in the Code of Criminal Procedure ?
- 3 Describe the method of collection, packing and forwarding of Questioned Documents, to obtain expert's opinion.
- 4 Discuss the salient features of The Dowry Prohibition Act 1961.

(2 × 15 = 30 marks)

II. Write short essay on any *three* of the following :

- 5 Elucidate the services offered by the Chemical and Biological Sections of any Forensic Science Laboratory.
- 6 Write an account of the impact of Daubert Standards in forensic work.
- 7 What are 'Documents' ? Give the various definitions and meaning according to Indian Laws.
- 8 Write a note on the Directive Principles of State Policy.
- 9 Draw out the salient features of the Prevention of Corruption Act.

(3 × 10 = 30 marks)

III. Write short notes on any *five* of the following :

- 10 Write a note on the role and services of a Mobile FSL.
- 11 Explain the Principle of Comparison with the aid of appropriate examples.

**Turn over**

- 12 Write a note on Circumstantial Evidence.
- 13 Describe the exemption from criminal liability for “Act of a child”, as laid down in the General Exceptions of the Indian Penal Code.
- 14 Write a note on the Information Technology Amendment Act.
- 15 Who is a Child, according to the JJ Act ? Add a note on the Observation Home.
- 16 Write a note on ‘Access to Service’ with reference to forensic Science Services.
- 17 Describe the importance of Control Samples while examining evidence.

(5 × 4 = 20 marks)

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