

Test Booklet Code & Serial No.

प्रश्नपत्रिका कोड व क्रमांक

Paper-II

FORENSIC SCIENCE

D

Signature and Name of Invigilator

1. (Signature)

(Name)

2. (Signature)

(Name)

Seat No.

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(In figures as in Admit Card)

Seat No.

(In words)

OMR Sheet No.

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(To be filled by the Candidate)

JAN - 39218

Time Allowed : 1¼ Hours]

[Maximum Marks : 100

Number of Pages in this Booklet : 12

Number of Questions in this Booklet : 50

Instructions for the Candidates

- Write your Seat No. and OMR Sheet No. in the space provided on the top of this page.
- This paper consists of **50** objective type questions. Each question will carry *two* marks. All questions of Paper-II will be compulsory, covering entire syllabus (including all electives, without options).
- At the commencement of examination, the question booklet will be given to the student. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as follows :
 - To have access to the Question Booklet, tear off the paper seal on the edge of this cover page. Do not accept a booklet without sticker-seal or open booklet.
 - Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to missing pages/questions or questions repeated or not in serial order or any other discrepancy should not be accepted and correct booklet should be obtained from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given. The same may please be noted.**
 - After this verification is over, the OMR Sheet Number should be entered on this Test Booklet.
- Each question has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.
Example : where (C) is the correct response.

<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
A	B	C	D
- Your responses to the items are to be indicated in the **OMR Sheet given inside the Booklet only**. If you mark at any place other than in the circle in the OMR Sheet, it will not be evaluated.
- Read instructions given inside carefully.
- Rough Work is to be done at the end of this booklet.
- If you write your Name, Seat Number, Phone Number or put any mark on any part of the OMR Sheet, except for the space allotted for the relevant entries, which may disclose your identity, or use abusive language or employ any other unfair means, you will render yourself liable to disqualification.
- You have to return original OMR Sheet to the invigilator at the end of the examination compulsorily and must not carry it with you outside the Examination Hall. You are, however, allowed to carry the Test Booklet and duplicate copy of OMR Sheet on conclusion of examination.
- Use only Blue/Black Ball point pen.**
- Use of any calculator or log table, etc., is prohibited.**
- There is no negative marking for incorrect answers.**

विद्यार्थ्यांसाठी महत्वाच्या सूचना

- परिक्षार्थींनी आपला आसन क्रमांक या पृष्ठवरील वरच्या कोपऱ्यात लिहावा. तसेच आपणांस दिलेल्या उत्तरपत्रिकेचा क्रमांक त्याखाली लिहावा.
- सदर प्रश्नपत्रिकेत **50** बहुपर्यायी प्रश्न आहेत. प्रत्येक प्रश्नास **दोन** गुण आहेत. या प्रश्नपत्रिकेतील **सर्व** प्रश्न सोडविणे अनिवार्य आहे. सदरचे प्रश्न हे या विषयाच्या संपूर्ण अभ्यासक्रमावर आधारित आहेत.
- परीक्षा सुरु झाल्यावर विद्यार्थ्यांला प्रश्नपत्रिका दिली जाईल. सुरुवातीच्या 5 मिनीटांमध्ये आपण सदर प्रश्नपत्रिका उघडून खालील बाबी अवश्य तपासून पहाव्यात.
 - प्रश्नपत्रिका उघडण्यासाठी प्रश्नपत्रिकेवर लावलेले सील उघडावे. सील नसलेली किंवा सील उघडलेली प्रश्नपत्रिका स्विकारू नये.
 - पहिल्या पृष्ठावर नमूद केल्याप्रमाणे प्रश्नपत्रिकेची एकूण पृष्ठे तसेच प्रश्नपत्रिकेतील एकूण प्रश्नांची संख्या पडताळून पहावी. पृष्ठे कमी असलेली/कमी प्रश्न असलेली/प्रश्नांचा चुकीचा क्रम असलेली किंवा इतर त्रुटी असलेली सदोष प्रश्नपत्रिका सुरुवातीच्या 5 मिनिटातच पर्यवेक्षकाला परत देऊन दुसरी प्रश्नपत्रिका मागवून घ्यावी. त्यानंतर प्रश्नपत्रिका बदलून मिळणार नाही तसेच वेळी वाढवून मिळणार नाही याची कृपया विद्यार्थ्यांनी नोंद घ्यावी.
 - वरीलप्रमाणे सर्व पडताळून पहिल्यानंतरच प्रश्नपत्रिकेवर ओ.एम.आर. उत्तरपत्रिकेचा नंबर लिहावा.
- प्रत्येक प्रश्नासाठी (A), (B), (C) आणि (D) अशी चार विकल्प उत्तरे दिली आहेत. त्यातील योग्य उत्तराचा रकाना खाली दर्शविल्याप्रमाणे ठळकपणे काळ/निळ्या करावा.
उदा. : जर (C) हे योग्य उत्तर असेल तर.

<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
A	B	C	D
- या प्रश्नपत्रिकेतील प्रश्नांची उत्तरे **ओ.एम.आर. उत्तरपत्रिकेतच दर्शवावीत**. इतर ठिकाणी लिहिलेली उत्तरे तपासली जाणार नाहीत.
- आत दिलेल्या सूचना काळजीपूर्वक वाचाव्यात.
- प्रश्नपत्रिकेच्या शेवटी जोडलेल्या कोऱ्या पानावरच कच्चे काम करावे.
- जर आपण ओ.एम.आर. वर नमूद केलेल्या ठिकाणा व्यतिरीक्त इतर कोठेही नाव, आसन क्रमांक, फोन नंबर किंवा ओळख पटेल अशी कोणतीही खूण केलेली आढळून आल्यास अथवा असभ्य भाषेचा वापर किंवा इतर गैरमागाचा अवलंब केल्यास विद्यार्थ्यांला परीक्षेस अपात्र ठरविण्यात येईल.
- परीक्षा संपल्यानंतर विद्यार्थ्यांने मूळ ओ.एम.आर. उत्तरपत्रिका पर्यवेक्षकांकडे परत करणे आवश्यक आहे. तथापी, प्रश्नपत्रिका व ओ.एम.आर. उत्तरपत्रिकेची द्वितीय प्रत आपल्याबरोबर नेण्यास विद्यार्थ्यांना परवानगी आहे.
- फक्त निळ्या किंवा काळ्या बॉल पेनचाच वापर करावा.**
- कॅलक्युलेटर किंवा लॉग टेबल वापरण्यास परवानगी नाही.**
- चुकीच्या उत्तरासाठी गुण कपात केली जाणार नाही.**

JAN - 39218/II—D

Forensic Science

Paper II

Time Allowed : 75 Minutes]

[Maximum Marks : 100

Note : This Paper contains **Fifty (50)** multiple choice questions. Each question carries **Two (2)** marks. Attempt *All* questions.

1. Fibrinogen and LDH are used for the identification of :

- (A) Saliva
- (B) Menstrual blood
- (C) Semen
- (D) Saliva, semen and menstrual blood

2. The sequence :

Mobile phase delivery system
→ pump → injector → column
→ detector → data processing system, is associated with which of the instrumental set up.

- (A) GC
- (B) HPLC
- (C) HPTLC
- (D) CZE

3. WCOT, PLOT are example of :

- (A) Chromatographic peak shape
- (B) Tubular column
- (C) UPLC
- (D) Injection port

4. In planar chromatography R_f is calculated by :

- (A) $\frac{\text{Distance travelled by solvent front}}{\text{Distance travelled by solute}}$
- (B) $\frac{\text{Distance to centre of component spot}}{\text{Distance to centre of standard spot}}$
- (C) $\frac{\text{Distance to centre of standard spot}}{\text{Distance to centre of component spot}}$
- (D) $\frac{\text{Distance travelled by solute}}{\text{Distance travelled by solvent front}}$

5. The transmittance property of “KBr” is in the range of :
- (A) 200 nm to 20000 nm
 - (B) 200 nm to 2000 nm
 - (C) 800 nm to 10000 nm
 - (D) 800 nm to 20000 nm
6. Blood group specific antigens are found on the surface of :
- (A) Erythrocytes
 - (B) Leucocytes
 - (C) Thrombocytes
 - (D) Neutrophils
7. Which of the following is involved in the immune system of human body ?
- (A) Erythrocytes
 - (B) Leucocytes
 - (C) Serum
 - (D) Thrombocytes
8. Coal oil is also known as :
- (A) Petrol
 - (B) Diesel
 - (C) Gas oil
 - (D) Kerosene
9. Δ^9 -THC gives.....colour with Duquenois reagent.
- (A) Violet
 - (B) Red
 - (C) Pink
 - (D) Orange
10. “Big four” components of biological profile are :
- (A) Race, sex, height, age
 - (B) Race, sex, height, skeleton
 - (C) Race, sex, stature, blood groups
 - (D) Teeth, height, race, sex

11. Speed ball is the combination of cocaine with :
- (A) 6-MAM
 - (B) DAM
 - (C) Δ^9 -THC
 - (D) LSD
12. Which drug has become increasingly popular as a drug of abuse in the “clubscene” owing to its ability to produce psychedelic effect ?
- (A) Heroin
 - (B) Cocaine
 - (C) Diazepam
 - (D) Ketamine
13. The most frequently used technique to forge signature is :
- (A) Copy forgery
 - (B) Traced forgery
 - (C) Computer aided forgery
 - (D) Projection forgery
14. Pedophile is having anal intercourse with :
- (A) Older women
 - (B) Children
 - (C) Homosexual adult
 - (D) Hijra
15. Among the following which one is the single most useful handwriting identification characteristics :
- (A) Connectives
 - (B) Spacing
 - (C) Line quality
 - (D) Pictorial effect
16. Perfect forgery of long signature is :
- (A) Not possible to accomplish perfectly
 - (B) May be possible in some cases
 - (C) Possible in all cases in competent hands
 - (D) Difficult to accomplish

17. The age determination of handwritten document from handwriting :
- (A) is not possible if some de-capacitating illness affects
 - (B) is not possible in all cases
 - (C) can be estimated in writings of the adolescents
 - (D) may become possible with future research
18. Mc Naughten's rule is :
- (A) Section 84
 - (B) Section 85
 - (C) Section 86
 - (D) Section 87
19. AFIS is a :
- (A) Method used to determine age of a latent print.
 - (B) Computer software designed to track fingerprint evidence with the chain of custody.
 - (C) Computerized system for storing and retrieving fingerprint records.
 - (D) Computer system programmed to analyze hair.
20. In accidental cases, when the body of the victim is brought for autopsy, the autopsy conduct is :
- (A) Anatomical autopsy
 - (B) Clinical autopsy
 - (C) Medico-legal autopsy
 - (D) Individual autopsy
21. Dry drowning is defined as :
- (A) Drowning in sea water
 - (B) Drowning in cold water, due to cardiac arrest
 - (C) Drowning of a dehydrated body
 - (D) Drowning where death is due to laryngospasm
22. Shovel-shaped incisors are more frequently found among :
- (A) American Whites
 - (B) African Negros
 - (C) Australian Aborigines
 - (D) Chinese

23. What is approximately the number of centers of ossification at birth ?
- (A) 206
 - (B) 450
 - (C) 806
 - (D) 600
24. Which of the following parts of foetal skeleton can provide a better estimate of sex ?
- (A) Pelvis
 - (B) Scapula
 - (C) Femur
 - (D) Clavicle
25. "Bertillonage", one of the earliest techniques of personal identification that was developed in the later part of 19th century was mainly based on :
- (A) Photographic comparison
 - (B) Handwriting comparison
 - (C) Anthropometry
 - (D) Fingerprints
26. Which of the following methods is best suited to recover dusty footwear impressions from a surface ?
- (A) Plaster Casting
 - (B) Wax Casting
 - (C) Electrostatic Lifting
 - (D) Sulphur Casting
27. Hackle marks are present in :
- (A) Paint
 - (B) Wood
 - (C) Steel
 - (D) Glass
28. Which of the following is an optical property ?
- (A) Hardness
 - (B) Refractive index
 - (C) Brittleness
 - (D) Density

29. Which of the following cast materials is popular to reproduce the striation marks ?
- (A) Plaster of Paris
 - (B) Sulphur
 - (C) Liquid silicone rubber
 - (D) Dental Plaster of Paris
30. In case of tire track, which of the following is *not* a class characteristic ?
- (A) Wear markings
 - (B) Arrangement of Landwidth
 - (C) Number of Lands
 - (D) Groove pattern
31. If one of the parents is of O blood group, the blood group of the child *cannot* be :
- (A) AB
 - (B) A
 - (C) O
 - (D) B
32. DNA profiling *cannot* be carried out from :
- (A) Erythrocytes
 - (B) Buccal smear samples
 - (C) Semen samples
 - (D) Hair root tissue
33. Which of the following organs secretes zinc in large amounts in man ?
- (A) Seminal vesicles
 - (B) Prostate gland
 - (C) Epididymis
 - (D) Vas deferens
34. Which of the following techniques involves bombarding of non-radioactive sample with neutrons :
- (A) ICPMS
 - (B) NAA
 - (C) AAS
 - (D) XBF

35. Name the reagent formed by mixing 1 ml of formaldehyde solution with 9 ml of sulfuric acid :
- (A) Mandelin's reagent
 - (B) Marqui's reagent
 - (C) Duquenois's reagent
 - (D) Zwikkers reagent
36. How many CFSLs are working under Directorate of Forensic Science Services ?
- (A) 06
 - (B) 03
 - (C) 04
 - (D) 07
37. Which of the following Sections of IPC are concerned with Dowry Death ?
- (A) Sect. 302
 - (B) Sect. 304
 - (C) Sect. 304A
 - (D) Sect. 304B
38. Which is the first case in which the defense attempted to rebut the State's scientific evidence ?
- (A) The Jon Benet Ramsey Case
 - (B) Lafarge Case
 - (C) Ruxton's Case
 - (D) Dr. Sam Sheppard Murder Case
39. Urea nitrate crystal test is used to identify :
- (A) Semen
 - (B) Urine
 - (C) Sweat
 - (D) Saliva
40. Why is it very important to secure the crime scene ?
- (A) To stop police from entering the crime scene
 - (B) To stop evidence from escaping
 - (C) To stop unauthorized personnel from entering the crime scene and in turn, destroying the evidence
 - (D) To arrest the suspect

41. What is the *correct* sequence of various stages in crime scene investigation ?
- (A) Protection and Collection of evidence
 - (B) Protection, Recognition, Documentation, Collection and Pakaging of evidences
 - (C) Protection, Documentation and Pakaging of evidence
 - (D) Collection and Pakaging of evidence
42. Which of the following statements is *not correct* ?
- (A) Glass is supercooled liquid.
 - (B) Glass is non-crystalline in nature.
 - (C) Glass is a solid material.
 - (D) Glass break with conchoidal fracture.
43. High explosive have generally burning rates upwards of :
- (A) 12,000 ft/sec.
 - (B) 14,000 ft/sec.
 - (C) 16,000 ft/sec.
 - (D) 20,000 ft/sec.
44. In test firing, the test pallets are obtained in :
- (A) Solid wax
 - (B) Rags
 - (C) Cotton wool
 - (D) Water
45. AK-47 is a popular rifle because bullet used in it has :
- (A) Very high velocity
 - (B) Soft nose and steel and lead core
 - (C) Easy to handle
 - (D) Steel core

46. ANFO commercial explosive consists of :
- (A) Ammonium nitrate + fuel oil
 - (B) Sodium nitrate + fuel oil
 - (C) Potassium nitrate + fuel oil
 - (D) Calcium nitrate + fuel oil
47. Ricochet means :
- (A) Tampered bullet
 - (B) Blunting of the bullet
 - (C) Unfired bullet
 - (D) Deflection of the bullet
48. Scale patterns of hair was initially classified by :
- (A) Gettler
 - (B) Madea
 - (C) Suzuki
 - (D) Martiz
49. Most useful physical property of fibers from forensic viewpoint is that many manufactured fibers exhibit :
- (A) Double refraction or birefringence
 - (B) Colour
 - (C) Diameter
 - (D) Texture
50. Which of the following tests is best suited for species determination from semen stains ?
- (A) Gel electrophoresis
 - (B) Precipitin test
 - (C) Cross over electrophoresis
 - (D) Inhibition test

JAN - 39218/II—D

ROUGH WORK