

17. What do you mean by Internal and External ballistics? What are smokeless and semi-smokeless propellant powders? Explain the various factors which affect internal ballistics? (2+2+6)
18. What is Terminal ballistics/wound ballistics? What do you mean by temporary cavity and permanent cavity in wound ballistics? Explain about the two types of wound and their nature which are formed due to a bullet when it enters into a human body. (2+4+4)
19. Describe about the mechanism of formation of Gunshot residues (GSR). Explain the steps involved in the collection and analysis of GSR. Write about the features used in the matching of bullets and cartridge cases in regular firearms. (3+4+3)
20. How is glass useful as an evidence? Name two types of glass. How are glass evidences examined for comparison? (2+2+6)
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S.No. 8414

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(For candidates admitted from 2019–2020 onwards)

B.Sc. DEGREE EXAMINATION, NOVEMBER 2022.

Part III — Forensic Science — Major

FORENSIC PHYSICS AND BALLISTICS

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20)

Answer ALL questions.

1. What are 'firing pin marks' and 'breach face marks'?
2. Name any two different types of bullet.
3. Define 'Lock time' and 'barrel time'.
4. Define the terms 'drop of a bullet' and 'yaw of bullet'.
5. Define 'striking velocity' and 'striking angle'.
6. What do you mean by 'tumbling of bullet'? Give one reason for tumbling of bullet.
7. What are 'Improvised firearms' and 'Country-made firearms'?
8. What causes 'Blackening' and 'Tattooing'?

9. What do you mean by 'Electric meter tampering'? What happens after a meter is tampered?
10. Name two types of glass fractures.

SECTION B — ($5 \times 5 = 25$)

Answer ALL questions, choosing either (a) or (b).

11. (a) What are Handguns? Give an example of a handgun. What are the three types of Handguns? (1+1+3)

Or

- (b) Explain any three types of bullet. What do you mean by 'Extractor marks' and 'Ejector marks'? (3+2)

12. (a) Write the mechanism of burning of propellants starting from the striking of primer to bullet movements. How does the shape and size of propellant affect the burning rate of propellants? (3+2)

Or

- (b) Explain in brief the effect of the following on trajectory of a bullet_ air resistance, base drag, drift, yaw and shape of bullet.

13. (a) Define 'Terminal ballistics'. What are striking velocity, Striking angle, nature of target and tumbling of bullet with respect to terminal ballistics? (1+4)

Or

- (b) What are the roles of the following?

- Instability of bullet
- Intermediate targets
- Range
- Ricochet
- Stopping power in terminal ballistics.

14. (a) What do you mean by 'Range of fire'? Explain 4 parameters which are used to determine range of fire.

Or

- (b) What is the nature of firearm injuries? How will you detect the injuries for accident, murder and self-defense?

15. (a) Name any 3 types of glass and explain them. Name two parameters which are used in the examination of glass.

Or

- (b) Suppose you get paint evidence at a crime scene. How will you proceed with the forensic examination?

SECTION C — ($3 \times 10 = 30$)

Answer any THREE questions.

16. Explain 5 types of marks produced during firing process which can be used to identify and compare two different bullets. Describe about different types of cartridge cases based on firing mechanism and structure of the case. (5+5)