

M.Sc. Sem.-1 Examination

403

Forensic Science

January-2024

Time : 2-30 Hours]

[Max. Marks : 70

Ques.1 Answer the following questions:

- i. Give action mechanism of flintlock ancient firearms. 7Marks
- ii. Describe the action mechanism of revolver 7Marks

OR

- i. Give the structure of a Smooth bore cartridge with a labeled diagram. 7Marks
- ii. Explain the action mechanism of a 7.62 SLR rifle. 7Marks

Ques.2 Answer the following questions:

- i. Give classification of propellant charge based on their shape and size. Also explain effect of shape of grain on rate of burning. 7Marks
- ii. Explain the ballistic advantages acquired by inducing rifling in the barrel. 7Marks

OR

- i. Derive formula for maximum range, angle of elevation and maximum height of a projectile in free space. 7Marks
- ii. Differentiate between entry and Exit wounds. 7Marks

Ques.3 Answer the following questions:

- i. Write a note on Cartridge case- Firearm Linkage. 7Marks
- ii. Write a note on estimation of a range of firing by examination of Firearm wound. 7Marks

OR

- i. Give the mechanism of formation of GSR and describe the collection, spot test chemical test, and identification of the shooter. 7Marks
- ii. Write a note on Bullet- Firearm Linkage. 7Marks

Ques.4 Answer the following questions:

- i. What are IEDs? Explain the mechanism and circuit diagrams of IEDs. 7Marks
- ii. Give a classification of Explosive substances. 7Marks

OR

- i. Differentiate between Low and High explosives. 7Marks
- ii. Describe the crime scene investigation of the explosion site. 7Marks

Ques.5 Attempt any seven out of twelve.

14Marks

1. What is rifling?
2. What are improvised firearms?
3. Boat tailed bullet.
4. What is the objective of The Arms Act 1959?
5. Why is the observation of stippling or tattooing important?
6. Give composition of RDX.
7. Explain XRF technique for explosive residues.
8. What are degressive propellant powders?
9. How do entrance wounds typically appear in terms of shape and margins?
10. What feature distinguishes entrance wounds from exit wounds in terms of appearance?
 - a) Abrasion ring
 - b) Circular shape
 - c) Irregular margins
 - d) Punched-out appearance
11. After discharging a round in a solid-frame revolver, what manual action is required to prepare the weapon for the next shot?
12. What are smokeless powders primarily composed of, and what is the compound that forms their base?