Total No. of Questions: 6 *Total No. of Printed Pages:2*

Enrollment No.....

Faculty of Science
End Sem Examination Dec-2023
FS3CO12 Forensic Ballistics

Programme: B.Sc. (Hons.) Branch/Specialisation: Forensic Science

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Q.1 i. In which year the Indian arms act enacted? **1**
(a) 1860 (b) 1959 (c) 1947 (d) 1950

ii. Who is known as developer of percussion primer? **1**
(a) Joshua Saw (b) Alfred Noble
(c) Alexander J Foresyth (d) Roger Bacon

iii. Bullet that leaves a visible smoke mark on the flight is called- **1**
(a) Fragile bullet (b) Smokeless bullet
(c) Hollow point bullet (d) Tracer bullet

iv. In India, we follow which patterns in firearms- **1**
(a) United Kingdom (b) Indian Pattern
(c) American (d) Spanish

v. AK-47 can fire- **1**
(a) 600 round/minute (b) 500 round/minute
(c) 400 round/minute (d) 300 round/minute

vi. Addition of lands and grooves in barrel of firearm: **1**
(a) Increase range (b) Increase accuracy
(c) Both (a) & (b) (d) None of these

vii. Tailing of a wound is seen in- **1**
(a) Chop wound (b) Contusion
(c) Laceration (d) Incised wound

viii. _____ is caused by the flame or hot gases not by the hot projectiles as is commonly believed. It is also known as burning or charring. **1**
(a) Scorching (b) Blackening (c) Tattooing (d) Flare bullet

ix. How many minimum numbers of cartridge are test fired in laboratory from suspected firearm for comparison with crime cartridge/bullet? **1**
(a) One (b) Two (c) Three (d) Five

x. NIBIN Stands for- **1**
(a) National Integrated Ballistic Identification Network
(b) National Integrated Ballistic Investigation Network
(c) National Institute of Ballistic Identification Network
(d) None of these

Q.2 i. Draw a well labelled diagram of shoulder gun and explain different components of the gun. **4**

ii. Define firearm and Classify firearms with their major characteristics. **6**

OR iii. Explain the mechanism of below firearm with well labelled diagram- **6**
(a) Match lock (b) Wheel lock
(c) Flint lock

Q.3 i. Define gun powder. What are the types and composition of gun powder? **4**

ii. Explain ammunition and its components with well labelled diagram of live cartridge. **6**

OR iii. Explain different types of bullets with their function. **6**

Q.4 i. Define vacuum trajectory and environmental trajectory with graph. **4**

ii. Write a detailed note on: **6**
(a) How environmental factors affect bullet in flight?
(b) How shape and sectional density of bullet affect the flight of it?
(c) Define extreme range and effective range of projectile.

OR iii. What are the major events occurring during Internal Ballistics? Write down the various factors which affecting the Internal Ballistics. **6**

Q.5 i. Write detailed note on: **4**
(a) Factors affecting terminal ballistics.
(b) Forensic importance of terminal ballistics.

ii. Explain various misconception in firearm injuries. **6**

OR iii. Discuss about nature of gunshot injuries. **6**

Q.6 i. Write down distinguish between improvised firearms and country made firearms. **4**

ii. Discuss the major marks produced on bullets and cartridges during firing process. **6**

OR iii. Discuss the collection of GSR form various surfaces and methods for analysis of gunshot residue. **6**

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Marking Scheme
Forensic Ballistics (T) - FS3CO12 (T)

Q.1	i)	B) 1959		**1**
	ii)	C) Alexander J Foresyth		**1**
	iii)	D) Tracer bullet		**1**
	iv)	A) United Kingdom		**1**
	v)	A) 600 round/minute		**1**
	vi)	C) both A and B		**1**
	vii)	D) Incised wound		**1**
	viii)	A) Scorching		**1**
	ix)	B) Two		**1**
	x)	A) National integrated ballistic identification network		**1**
Q.2	i.	Labelled diagram	2 Marks	**4**
		Gun components -	2 Mark	
	ii.	Definition of firearm	1 Mark	**6**
		Classification of firearms	5 Marks	
OR	iii.	Mechanism of match lock with diagram	2 Marks	**6**
		Mechanism of Wheel lock with diagram	2 Marks	
		Mechanism of Flint lock with diagram	2 Marks	
Q.3	i.	Definition of firearm	1 Mark	**4**
		3 types of gun powder	(1 Mark*3)	
	ii.	Definition of ammunition	1 Mark	**6**
		Components	3 Marks	
		Diagram	2 Marks	
OR	iii.	6 types of bullets with their function	(1 Mark *6)	**6**
Q.4	i.	Definition of vacuum trajectory	2 Marks	**4**
		Definition of environmental trajectory	2 Marks	
	ii.	environmental factors	2 Marks	**6**
		Shape and sectional density of bullet	2 Marks	
		Extreme range and effective range	2 Marks.	
OR	iii.	Introduction of internal ballistics	1 Mark	**6**
		5 factors	(1 Mark *5)	
Q.5	i.	A) Factors affecting terminal ballistics.	2 Marks	**4**
		B) Forensic importance of terminal ballistics.	2 Marks	
	ii.	6 Points about misconception	(1 Mark *6)	**6**
OR	iii.	Types injuries	(1 Mark*6)	**6**
Q.6	i.	4 distinguish	(1 Mark*4)	**4**
	ii.	4 Marks on Cartridge case	(1 Mark*4)	**6**
		2 marks on bullet	(1 Mark *2)	
OR	iii.	Collection	2 Marks	**6**
		2 Methods	(2 Marks*2)	

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