Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Science

End Sem Examination Dec 2024

FS3CO22 Forensic Ballistics

Programme: B.Sc. 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.

			Marks	BL	PO	CO	PSO
Q.1	i.	The bore diameter of gun is 0.729 inch then what will be the bore of the firearm- (a) 12 (b) 14 (c) 16 (d) 18	1	3	2	2	1
	ii.	The mechanism or the system of hand gun that cover the handling of loading, firing and extraction of rounds is called _____. (a) Action (b) Breach (c) Chambering (d) Grouping	1	2	3	2	1
	iii.	A cartridge in which the primer is located inside the cup placed against the one side of case and had a pin projecting outward from the case at other side is- (a) Rim-fire (b) Boxer (c) Centre-fire (d) Pin -fire	1	1	2	3	1
	iv.	Characteristics of Dum-Dum bullet is- (a) It has a cavity in the nose (b) Expand on impact (c) Its velocity is very high (d) Contract on impact	1	1	2	2	1
	v.	Instrument used for inspecting the interior of a gun barrel and for measuring the rate of twist of the rifled bore of a firearm is_____. (a) Anemometer (b) Gyrometer (c) Helixometer (d) Spin gauge	1	1	2	3	1

P.T.O.

vi.	_____have linear cuts on the upper part of the jacket of bullet. (a) Hard-core bullet (b) Belted bullet (c) Pierced tip bullet (d) Hollow point bullet	**1**	1	2	3	1
vii.	A bullet travelling in irregular fashion instead of travelling nose -on is called- (a) Tumbling of bullet (b) Ricochet of bullet (c) Bullet graze (d) Yawning of bullet	**1**	1	1	3	1
viii.	The grains of unburnt gun powder emerging from muzzle end of firearm causes _____ on the skin. (a) Blackening (b) Singeing (c) Tattooing (d) Abrasion collar	**1**	2	1	2	1
ix.	An internal metal component in boxer primer assembly against which the priming mixture is crushed by firing pin blow- (a) Shearing (b) Trigger guard (c) Anvil (d) Triggering pin	**1**	3	1	3	1
x.	An inert cartridge that cannot be fired is called- (a) Disintegrating bullet (b) Mushroom bullet (c) Conoidal bullet (d) Dummy bullet	**1**	2	2	4	1
Q.2 i.	Enlist four advantages of rifling.	**2**	1	3	3	1
ii.	Write various characteristics of rifled and shotguns.	**3**	2	2	4	1
iii.	Define ballistics and explain working mechanism of gun.	**5**	2	2	3	1
OR iv.	Write in detail about the classification of firearms.	**5**	1	1	4	1

Q.3 i.	Write the composition of semi-smokeless powder.	**2**	1	2	4	1
ii.	How will you examine a fired cartridge for identification purpose?	**8**	2	2	4	1
OR iii.	Write the constructional features and characteristics of different types of bullets.	**8**	2	3	4	1
Q.4 i.	Define ballistic coefficient and write down its formula.	**3**	2	1	1	1
ii.	Explain how shape, size and burning rate of propellant affects the internal ballistics.	**7**	2	3	3	1
OR iii.	What is corrosion, erosion, and gas cutting? How they affect the firing process?	**7**	1	3	4	1
Q.5 i.	Write in brief about ricochet of bullet.	**4**	1	2	4	1
ii.	How will you determine range of fire based on gunshot wounds?	**6**	2	3	3	1
OR iii.	Write a short note on striking velocity and striking angle of projectile with equation.	**6**	2	3	4	1
Q.6	Attempt any two:					
i.	How will you identify and match the bullets?	**5**	2	3	3	1
ii.	Write a note on IBIS.	**5**	1	2	3	1
iii.	Write collection and chemical examination Gunshot residue.	**5**	1	2	4	1

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Marking Scheme
Forensic Ballistics - FS3CO22

Q.1	i)	a) 12 bore		**1**
	ii)	a) Action		**1**
	iii)	d) Pin-Fire		**1**
	iv)	b) expand on impact		**1**
	v)	c) Helixometer		**1**
	vi)	c) pierced tip bullet		**1**
	vii)	d) Yawning of bullet		**1**
	viii)	c) tattooing		**1**
	ix)	c) anvil		**1**
	x)	d) dummy bullet		**1**
Q.2	i.	Each advantage	(0.5 Marks*4)	**02**
	ii.	Each characteristics of	(0.5 Marks*6)	**03**
	iii.	Define -	01 Mark,	**05**
		Working-	04 Marks	
OR	iv.	Based on action,	2.5 Marks	**05**
		based on loading, etc.	2.5 Marks	
Q.3	i.	Composition -	2 Marks,	**02**
	ii.	Firing pin	2 Marks	**8**
		Breech	2 Marks	
		Chamber and	2 Marks	
		Striations	2 Marks	
OR	iii.	Bullet characteristics	2 Marks,	**8**
		Types of bullet-	4 Marks	
		Constructional features-	2 Marks	
Q.4	i.	Define-	1 Mark	**3**
		formula-	2 Marks	
	ii.	Shape	2 Marks	**7**
		Size	2 Marks	
		Burning Rate	2 Marks	
OR	iii.	Define -	3 Marks	**7**
		Factors-	4 Marks	
Q.5	i.	Define-	02 Marks	**4**
		mechanism -	02 Marks	
	ii.	Based on wounds, Abrasion , grease or dirt collar, Tattooing, Blackening etc with range	(1 Mark*6)	**6**
OR	iii.	3 marks each note		**6**
Q.6				
	i.	Matching process, comparison microscope, SEM etc		**5**
	ii.	Define, working, data base maintenance method		**5**
	iii.	GSR collection-	2 Marks	**5**
		Analysis-	3 Marks	

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