

Enrollment No.....



Faculty of Science
End Sem Examination Dec 2024
FS3CO23 Forensic Toxicology

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.

		Marks	BL	PO	CO	PSO
Q.1	i. In what year was Mathieu Orfila's pioneering work, <i>Traité des poisons</i> , published, laying the groundwork for modern toxicology?	1	1	1	1	3
	(a) 1807 (b) 1814					
	(c) 1829 (d) 1845					
	ii. Which analytical technique is commonly used in forensic toxicology for its high specificity and ability to analyse trace amounts of toxins?	1	2	2	1	3
	(a) Thin Layer Chromatography (TLC)					
	(b) Mass Spectrometry (MS)					
	(c) UV-Visible Spectroscopy					
	(d) Fluorescence Microscopy					
	iii. What type of poison typically affects the central nervous system and causes paralysis?	1	2	1	1	3
	(a) Cardiovascular poison					
	(b) Neurotoxic poison					
	(c) Corrosive poison					
	(d) Hepatotoxic poison					
	iv. The presence of food in the stomach generally has which effect on the absorption of a poison?	1	2	1	1	3
	(a) Increases absorption rate					
	(b) Neutralizes poison					
	(c) Decreases absorption rate					
	(d) Has no effect on absorption rate					

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v.	Which tranquilizer is known for its highly addictive potential and is classified under Schedule IV drugs? (a) Diazepam (b) Haloperidol (c) Olanzapine (d) Lithium	1	1	1	3	3
vi.	Which of the following metabolites is used to confirm methanol poisoning? (a) Acetone (b) Formic acid (c) Oxalic acid (d) Succinic acid	1	1	1	3	3
vii.	Which of the following substances is NOT classified as a psychotropic substance? (a) MDMA (b) LSD (c) Alcohol (d) Methamphetamine	1	1	1	5	3
viii.	Which drug, originally developed as an anaesthetic, is commonly known as “Angel Dust”? (a) Phencyclidine (PCP) (b) MDMA (c) Cocaine (d) LSD	1	1	1	5	3
ix.	Opium is derived from which part of the poppy plant (Papaver somniferum)? (a) Leaves (b) Stems (c) Seeds (d) Unripe seed pods	1	2	1	4	3
x.	Which snake venom is particularly rich in hemotoxins, causing blood coagulation and haemorrhage? (a) Coral snake (b) Rattlesnake (c) Cobra (d) Sea snake	1	2	1	4	3
Q.2	i. Define toxicology and forensic toxicology.	2	1	1	1	3
	ii. Explain roles and responsibilities of a toxicologist.	3	1	5	1	3
	iii. Write a note on “historical development of forensic toxicology.”	5	2	1	1	3
OR	iv. Explain various branches of toxicology.	5	1	1	1	3
Q.3	i. Define poison. Give any four examples of it.	2	1	1	1	3
	ii. Explain the classification of poison.	8	1	1	1	3

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OR	iii. Write a note on “Pharmacokinetics.”	8	2	1	1	3
Q.4	i. How will you extract metallic poison from biological matrices?	3	3	3	3	3
	ii. Explain general studies and analysis of the following: (a) Arsenic poison (b) Mercury	7	1	2	3	3
OR	iii. Give chemical tests for the following: (a) Ethanol poisoning (b) Methanol poisoning	7	1	2	3	3
Q.5	i. What is drug of abuse? Why drugs are abused in sports?	4	2	1	5	3
	ii. What are depressants? Explain any two drugs in detail.	6	1	1	5	3
OR	iii. Describe LSD and MDMA in detail.	6	1	1	5	3
Q.6	Attempt any two:					
	i. Explain features and analysis of the following: (a) Bhilawa (b) Abrus	5	1	1	4	3
	ii. Write a note on “animal poisoning.”	5	2	1	4	3
	iii. Write a note on “opium and its derivatives.”	5	2	1	4	3

Marking Scheme
FS3CO23 (T) Forensic Toxicology (T)

Q.1	i)	B) 1814	1
	ii)	B) Mass Spectrometry (MS)	1
	iii)	B) Neurotoxic Poison	1
	iv)	C) Decreases absorption rate	1
	v)	A) Diazepam	1
	vi)	B) Formic acid	1
	vii)	C) Alcohol	1
	viii)	A) Phencyclidine (PCP)	1
	ix)	D) Unripe seed pods	1
	x)	B) Rattlesnake	1

Q.2	i.	1 mark for each definition	2
	ii.	Any 3 roles and 3 responsibilities. ½ mark each	3
	iii.	Any 10 historical developments. 0.5 mark each	5
OR	iv.	Any 5 branches. 1 mark each	5

Q.3	i.	Definition: 1-mark, examples: 0.25 mark each (4 example)	2
	ii.	Detailed classification of poison	8
OR	iii.	8 points: (each 2 marks) A- absorption, D- distribution, M- metabolism, E- Excretion	8

Q.4	i.	2 extraction methods: 1.5 mark each	3
	ii.	3.5 marks for each sub question.	7
OR	iii.	3.5 marks for each sub question.	7
Q.5	i.	Definition: 2 marks, Reason: 2 marks	4
	ii.	3 marks for each drug.	6
OR	iii.	3 marks for each drug.	6
Q.6			
	i.	2.5 marks for each poison	5
	ii.	10 points: 0.5 marks for each point.	5
	iii.	Definition: 1 mark, derivatives: 4 marks	5
