

THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF HUMANITIES AND SOCIAL SCIENCES
DEPARTMENT OF LEGAL STUDIES



LL.M IN CRIMINAL JUSTICE ADMINISTRATION DEGREE PROGRAMME

FINAL EXAMINATION (FIRST YEAR) - 2023/2024

LLPA306 -CRIMINAL INVESTIGATION I (FORENSIC TOXICOLOGY, DNA, & EQD)

DURATION: 03 HOURS

Date: 30.11. 2024

Time: 09.30 a.m. - 12.30 p.m.

Total Number of Questions: 07

Answer FOUR (04) questions only.

Select at least one question from each part.

Write answers for each part on a separate answer book.

Candidates will be penalized for illegible handwriting.

PART 1 -FORENSIC TOXICOLOGY

01.

(i) Giving one example each, name any five main groups of poisons except gases.

(05 marks)

(ii) Write a brief account on gas poisoning including the following,

- a. Names of the available gases in Sri Lanka
- b. Source/s of the gases
- c. Any specific Smell of the gases
- d. Any specific post mortem changes due to these gases

(05 Marks)

(iii) Giving reasons compare the severity of following two cases on the basis of route of Administration & Physical form of poison.

- a. A person injected paraquat liquid to another person's neck and the person died two hours after admission to hospital.
- b. A man poured strychnine crystals to his orange drink and consumed in the presence of his girlfriend to commit suicide. He died one day after admission to hospital.

(04 Marks)

(iv) A man working in a post office has stolen a whisky bottle sent by post. During the new year he consumed it with a friend. After drinking half a glass both developed burning sensation and started vomiting. Few hours later, they both died in the hospital. The bottle with remaining drink, the glasses used to drink whisky and opened bites packet was found at home. Methamphetamine was identified in the whisky bottle.

(a) Methamphetamine metabolize to Amphetamine & Nor- Ephedrine in the body.

What is the main organ responsible for metabolism?

Which organ is responsible for excretion of the drug and its metabolites?

(b) Considering the metabolism of this drug, giving reasons name suitable samples to be sent by the Judicial Medical Officer for toxicological analysis?

(c) What specimens do you request police to collect?

(d) Describe the colour test that could be carried out to identify Methamphetamine.

(11 Marks)

02.

(i) Briefly explain what is Acute poisoning & Chronic Poisoning.

(05 marks)

(ii) Arsenic can be used as both acute and chronic poison. If a person died of chronic Arsenic poisoning, what specimens do you ask the JMO to send.

(02 Marks)

(iii) Give one sample preparation technique (Only the name- details not required) that could be used to extract arsenic from the above specimens.

(01 mark)

(iv) Due to a family dispute, a liquid poison was poured on to one person's head by another person. He was admitted to hospital but died after few days. The shirt and

the sarong of the deceased had a very strong petroleum smell and had bluish green wet patches all over. The empty poison bottle was also found at the scene.

According to the above history,

- a. What is the probable poison in this particular case and why do you suspect it?
- b. What specimens do you request police to collect?
- c. What specimens do you request from the judicial medical officer (JMO) for toxicological analysis in this case? What are the most important specimens to be sent by the JMO for toxicological analysis?
- d. How do you instruct the JMO to collect and forward specimens to Govt. Analyst's Department?

(17 Marks)

03.

- (i) Pesticides can be classified into several groups. Name five such groups.

(05 Marks)

- (ii) Briefly explain three different doses important in toxicology.

(06 marks)

- (iii) The fatal dose of a poison depends on several factors. Name three main factors.

(03 Marks)

- (iv) A person was given arrack mixed with a barbiturate drug by one of his friends. He was a habitual drinker, however on that particular day he consumed only a half a glass of arrack. After about half an hour the person developed headache & unconsciousness and was admitted to hospital. He died on the following day.

- a. Explain the death of this person based on synergism.
- b. What are the metabolites of Ethanol?
- c. What is the most suitable technique that could be used to analyse ethanol and its metabolites in one run. What characteristics of ethanol make this technique suitable?
- d. What are the most suitable samples to be analysed in this case to identify ethanol and barbiturate. (Give separately)

(11 Marks)

PART 02-EXAMINATION OF QUESTIONED DOCUMENTS (EQD)

- 04.** Forensic findings for evidence of alterations, obliterations, erasures and page substitutions play a very vital role in the criminal investigations in forensic document examinations.

Discuss this statement with the relevant examples.

(25 Marks)

- 05.** Discuss the scientific theory of hand writings and signatures authorship identification.

(25 Marks)

PART 03-FORENSIC SEROLOGY & DNA

- 06.**
- i. What is DNA and how it is important in crime investigation?
 - ii. What do you mean by the contamination during evidence collection at the crime scene? How it is prevented?
 - iii. Why should blood and semen stains on clothing be dried before packing?

Which type of bag/Container is used for the packing of different types of biological evidence?

(25 marks)

- 07.**
- i. What information must be written on the evidence packing and what documentation is required?
 - ii. What are the collection methods for each form of blood evidence?
 - iii. What are the main steps of Forensic DNA Analysis?

(25 Marks)

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