

Second Semester B. Sc. (Part - I) Examination

2S FORENSIC SCIENCE

(Forensic Chemistry)

P. Pages : 7

Time : Three Hours]

[Max. Marks : 80

- Note :** (1) All questions are compulsory.
(2) Question 1 carry 8 marks while each of remaining Six questions carry 12 marks.
(3) Draw diagrams and write equations wherever necessary.
(4) Use of calculator is allowed.

1. (A) Fill in the blanks.
- (i) Heroins are the class of ——— drugs.
 - (ii) Alcohols are used for ——— purposes.
 - (iii) Adulteration can be controlled by ——— authorities.
 - (iv) Volatile substances can be analysed by ——— chromatography. 2

(B) Select correct answer from the given alternatives.

(i) Liquid oil can be converted to solid fats by

- (a) Hydrogenation
- (b) Saponification
- (c) Hydrolysis
- (d) Oxidation of double bond

(ii) HPLC is used to separate

- (a) Volatile sample
- (b) Solid sample
- (c) Liquid sample
- (d) Gaseous sample

(iii) Metallic poisoning is detected by

- (a) HPLC
- (b) Atomic absorption spectroscopy
- (c) Gas chromatography
- (d) Flame photometry.

(iv) Which one is Hallucinogenous drug ?

- (a) Cannabis
- (b) Cocaine
- (c) Morphine
- (d) Heroin

(C) Answer the following in **One** sentence each.

- (i) What are paint ?
- (ii) Define medicine.

OR

13. (P) What are different types of food adulteration ? Explain. 4

(Q) Which agencies are involved in prevention of food adulteration ? Explain. 4

(R) Explain analytical techniques used for analysis of food adulteration. 4



UNIT V

10. (A) Distinguish between illicit liquor and alcohol. 4
- (B) Write an account on absorption and detoxication of alcohol. 4
- (C) Give the classification of alcohol on the basis of composition (percentage) 4

OR

11. (P) What are sampling problems and difficulties in diagnosis of alcohol cases ? 4
- (Q) Discuss consequences of drunken driving. 4
- (R) What are analytical techniques used for analysis of alcohol sample ? Explain. 4

UNIT VI

12. (A) What are arson ? How are they classified ? 4
- (B) Explain investigation and evaluation process of arson cases. 4
- (C) Write an account on management of arson case. 4

- (iii) What are cements ? 4
- (iv) Define food adulteration. 4

UNIT I

2. (A) What is difference between saponification value and Iodine value ? 4
- (B) What are petroleum products ? Give brief account of petroleum refining. 4
- (C) Distinguish between qualitative analysis and quantitative analysis. 4

OR

3. (P) Explain screening and sampling method of collection of samples in forensic investigation. 4
- (Q) Give composition and toxic effects of tobacco coffee and tea. 4
- (R) What is Arsenic poisoning ? Give colour tests of Arsenic and copper. 4

UNIT II

4. (A) Define HPLC. Explain instrumentation in HPLC. 4

- (B) How is Gas chromatography used to separate the volatile sample ? Explain. 4
- (C) Give forensic applications of atomic absorption spectroscopy and flame photometry. 4

OR

5. (P) Discuss instrumentation of Atomic absorption spectroscopy. 4
- (Q) What is stationary phase ? Explain working of stationary phase. 4
- (R) What are columns ? How it works in Gas chromatography and HPLC ? 4

UNIT III

6. (A) Describe the signs and symptoms of metallic poisoning in survival and post mortem cases. 4
- (B) What precautions are taken for collection, preservation and forwarding of toxicological exhibits ? 4
- (C) Explain role of forensic expert for interpretation of analytical data and opinion. 4

OR

7. (P) What is toxicology ? Give the classification of poison. 4
- (Q) Explain mode of action and its effect on vital function in poisoning case. 4
- (R) How is poisoning detected on the basis of metabolic study ? Explain. 4

UNIT IV

8. (A) Give the classification of Narcotic drugs on the basis of their effects. 4
- (B) Explain effect of drug and tolerance of drug on drug addict. 4
- (C) Discuss drug pathway and drug toxicity. 4

OR

9. (P) How is drug addict identified ? Explain signs and symptoms. 4
- (Q) Explain the role of analytical techniques in analysis of drugs. 4
- (R) Explain absorption and mode of action of cocaine and opiate drug. 4