

B.Sc. Part-I Semester-II Examination

2S : FORENSIC SCIENCE

(Forensic Chemistry)

Time : Three Hours]

[Maximum Marks : 80

N.B. :- (1) All questions are compulsory.

(2) Question 1 carries 8 marks, remaining each six questions carry 12 marks.

(3) Draw diagrams wherever necessary.

1. (A) Fill in the blank its :

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(i) Only _____ samples are used to analyse by using Gas chromatography.

(ii) Narcotic drugs are the drugs which affect on _____ of body.

(iii) _____ burning of others' property is called Arson.

(iv) _____ body monitors to avoid the adulteration of food products.

(B) Select correct answer from given alternatives :

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(i) In chromatography locating agent of amino acids is :

(a) Diazo reagent

(b) Ninhydrin spray

(c) Amphoteric oxides

(d) Neutral oxides.

(ii) Which of the following is not a common accidental or natural cause of fire ?

(a) Electric system

(b) Gas

(c) Sunlight

(d) Spontaneous ignition.

(iii) Increase in flow rate of mobile phase leads to :

(a) Faster elution of sample component

(b) Slow elution of sample component

(c) Moderate elution of sample component

(d) Stops elution of sample component.

- (iv) In methyl alcohol poisoning, central nervous system and cardiac depression, it is due to:
- (a) Formaldehyde and formic acid
 - (b) Acetaldehyde
 - (c) Pyridine
 - (d) Acetic acid

(C) Answer the following in one sentence each : 4

- (i) What is chromatography ?
- (ii) What are narcotics ?
- (iii) Define adulteration
- (iv) What are cements ?

2. (A) What precautions are taken for collection and preservation of toxicological exhibits for qualitative analysis ? 4
- (B) Explain role of paint in forensic analysis. 4
- (C) Why there is need to study the composition of petroleum products ? Explain. 4

OR

3. (P) Give composition of cement. How is it analysed for forensic investigation ? 4
- (Q) Explain difference between saponification value and Iodine Value. 4
- (R) What are dyes ? Explain its role in forensic investigation. 4
4. (A) Discuss importance and forensic applications of gas chromatography. 4
- (B) Explain working and Instrumentation of HPLC. 4
- (C) How is metallic poisoning analysed by using Atomic absorption spectroscopy ? Explain. 4

OR

5. (P) Write in brief about different types of columns used in GC and HPLC. 4
- (Q) Discuss role of detector for the analysis of sample in GC and HPLC. 4
- (R) Give importance and working of atomic absorption spectroscopy. 4
6. (A) Why toxicology is important in forensic chemistry ? Explain. 4
- (B) How are toxicological exhibits collected and preserved in fetal and survival cases ? 4
- (C) Write in brief signs and symptoms of metallic poisoning in survival cases. 4

OR

7. (P) What are different classes of poisoning ? Explain. 4
- (Q) Write in brief causes of plant poisoning and animal poisoning in India. 4
- (R) Give the steps of interpretation of analytical data and opinion of forensic experts. 4

8. (A) How will you identify drug addict on the basis of signs and symptoms ? Explain. 4
(B) Write in brief about class of sedative drug. 4
(C) Describe the process of excretion of drug. 4

OR

9. (P) What are Hallucinogenous drug. Explain its signs and symptoms in addict. 4
(Q) What is drug toleration ? Explain its effect. 4
(R) Give brief account of analytical techniques used for analysis of Narcotic drugs. 4
10. (A) Discuss difference between alcoholic and non-alcoholic beverages. 4
(B) Explain the process of absorption and de-toxification of alcohol in metabolism. 4
(C) Write in brief about alcohol poisenic causes. 4

OR

11. (P) Give the classification of alcohol on the basis of composition. 4
(Q) Explain process of excretion of alcohol through body. 4
(R) What are sampling problems and difficulties in diagnosis of alcohol intoxication cases. 4
12. (A) What is arson ? How is arson classified ? Explain. 4
(B) Write in brief on clue material and arson exhibits. 4
(C) What is the role of government bodies involved for prevention of food adulteration ? 4

OR

13. (P) What are the methods of analysis of food adulteration ? 4
(Q) Give in brief with examples of fraud cases of arson. 4
(R) Describe management and processes of investigation of arson case. 4

