AS–1397

B.Sc. Part—I (Semester—II) Examination

FORENSIC SCIENCE

(Forensic Chemistry)

Time : Three Hours] [Maximum Marks : 80

Note :— (1) All questions are compulsory.

(2) Question No. **1** carries **8** marks while **all** other questions carry **12** marks each.

(3) Draw diagrams and write equations wherever necessary.

(4) Use of calculator is allowed.

1. (A) Fill in the blanks :

(i) Petroleum product contains _____.

(ii) _____ is Heart of Gas Chromatography.

(iii) _____ drugs affect on Central Nervous System.

(iv) Milk can be adulterated with _____. 2

(B) Select correct answer from the given alternatives :

(i) LPG (Household Cooking Gas) is mainly a mixture of :

(a) Methane + Ethane (b) Acetylene + O_2

(c) Butane + iso-butane (d) Acetylene + H_2

(ii) Atomic absorption spectroscopy is used to detect :

(a) Metallic Poisoning (b) Animal Poisoning

(c) Plant Poisoning (d) Narcotic Poisoning

(iii) Which of the following metals is deadly poisonous ?

(a) Arsenic (b) Lead

(c) Copper (d) Zinc

(iv) Cocaine is a class of drug :

(a) Sedative (b) Stimulant

(c) Hallucinogenous (d) None of these 2

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

(i) What is toxicology ?

(ii) Define adulteration

(iii) What is arson ?

(iv) Define illicit liquor. 4

2. (A) What is the difference between qualitative and quantitative analysis ? Explain. 4

(B) What is the need of paint analysis in forensic investigation ? Explain. 4

(C) Explain inorganic metal poisoning. Give colour test of Arsenic and Copper. 4

OR

3. (P) What are petroleum products ? Give chemical composition of Kerosene. 4

(Q) Discuss screening and sampling method for collection of different types of samples in forensic investigation. 4

(R) Explain the toxic effect of tobacco, coffee and tea. 4

4. (A) What is Gas chromatography ? Explain principles of gas chromatography. 4

(B) Explain working of column and detector in HPLC. 4

(C) What is Atomic absorption spectroscopy ? Give its forensic applications. 4

OR

5. (P) What is the role of column and detector in gas chromatography ? 4

(Q) Discuss difference between Atomic absorption spectroscopy and flame spectrometry. 4

(R) Give forensic application of Gas Chromatography. 4

6. (A) What are Poisons ? Give the difference between medicine and poison. 4

(B) Explain collection and preservation of toxicological exhibits in fatal and survival cases. 4

(C) Discuss the steps of interpretation of analysis of poisoning sample. 4

OR

7. (P) Describe signs and symptoms for detection of poisons on the basis of their metabolic studies in survival cases. 6

(Q) What is plant poisoning ? 2

(R) Explain cattle poisoning in India. 4

8. (A) What are narcotic drugs and psychotropic substances ? Explain. 4

(B) What are different analytical techniques used for identification of drugs ? 4

(C) Explain absorption and distribution process of poison in various parts of body. 4

OR

9. (P) Write in brief process of excretion of drugs. 4

(Q) Give the classification of Narcotic drugs on the basis of mode of action. 4

(R) Explain effect of drug, tolerance of drug and dependance of drug on drug addict. 4

10. (A) What are types of Liquor ? Explain proof spirit. 4

(B) Explain absorption and de-toxication of alcohol in different parts of body. 4

(C) Discuss action and excretion of alcohol through different parts of body. 4

OR

11. (P) Explain sampling problems and difficulties in diagnosis of alcohol cases. 4

(Q) Describe in brief, analytical techniques in the analysis of alcohol. 4

(R) What precautions are taken for sampling and preservation of sample in alcohol cases ? 4

12. (A) Discuss different types of Arson cases in brief. 4

(B) Give an account of types of food adulteration. 4

(C) Discuss investigation and evaluation process of arson cases. 4

OR

13. (P) How is food adulteration prevented at different levels ? Explain. 4

(Q) What are difficulties in investigation and evaluation of Arson cases ? 4

(R) Write in brief on Drug Control Act, 1940. Role of Chief Commissioner under this Act. 4