

VPM'S ADVANCE STUDY CENTRE, THANE
DIPLOMA IN APPLIED ANALYTICAL CHEMISTRY
B. N. BANDODKAR COLLEGE OF SCIENCE, THANE
PAPER-I

Date: 25nd April 2016

Marks: 100

INSTRCUTIONS FOR THE CANDIDATES

1. ALL THE QUESTIONS ARE COMPULSARY.
 2. TIME DURATION IS OF 3 Hrs.
 3. STUDENTS ARE NOT ALLOWED TO USE THEIR MOBILES DURING THE EXAM PERIOD.
 4. USE OF SCIENTIFIC CALCULATOR IS ALLOWED.
 5. STUDETNs ARE REQUESTED TO WRITE EACH SECTION ON SEPRATE ANSWER SHEET.
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Section-I

Q. 1. Attempt any Three of the following. (15)

- A. Draw a schematic diagram of Gas Chromatography. Explain in brief the function of each component of G.C.
- B. Explain different applications of Mass Spectrometry.
- C. Give detail comparison between HPLC and GC.
- D. Describe in brief different characteristics of Ideal Detector.
- E. Explain basic theory and principles of Mass spectrometry.

Q. 2. Attempt any Three of the following. (15)

- A. Describe various factors on which column efficiency is dependent.
- B. Name of the types of columns used in GC. What do you mean by reverse phase and normal phase chromatography in HPLC?
- C. Write applications of GC at various industrial levels with examples.
- D. Write applications of HPLC in brief.
- E. Write a note on GC-MS.

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Q. 3. Choose any option out of the following. (10)

- 1) **The detectors used in Gas-liquid chromatography are**
 - a) Flame Ionization Detector
 - b) Sulfur Chemiluminescence Detector
 - c) Electron Capture Detector
 - d) All of the above
- 2) **Flame Photometry is generally used for analysis of**
 - a) Alkali & alkaline earth metals
 - b) Transition metals
 - c) Lanthanides
 - d) Actinides
- 3) **The efficiency of the hollow cathode lamp in AAS depends upon**
 - a) Operating potential
 - b) Size
 - c) Both are correct
 - d) Both are incorrect
- 4) **In Atomic absorption spectrum,**
 - a) dark lines against bright background is observed.
 - b) bright lines against a dark background is observed.
- 5) **Electricity in Arc is carried by the motion of**
 - a) Electrons and ions
 - b) Electrons and protons
 - c) Electrons and neutrons
 - d) Neutrons and protons

Q. 4. Define in brief. (5)

- a. Internal standard
- b. Mobile phase with example
- c. Plate height
- d. Isocratic elution
- e. Gradient elution