



C16-AEI-404

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BOARD DIPLOMA EXAMINATION, (C-16)
OCTOBER—2020
DAEI—FOURTH SEMESTER EXAMINATION
ANALYTICAL INSTRUMENTATION

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

Instructions : (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define the term atomic spectroscopy.
2. List the components of a monochromator.
3. List any three applications of flame photometer.
4. List any three applications of auto analyzer.
5. Define the resolution of a mass spectrometer.
6. List any three advantages of mass spectrometer.
7. Define chromatography.
8. Differentiate between the terms absorption and adsorption.
9. State the necessity of conductivity cells.
10. List the types of radiation detectors.

PART—B

10×5=50

- Instructions :** (1) Answer *any five* questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

11. (a) Explain prism monochromator.
(b) Explain the principle of operation of UV spectrophotometer with diagram.
12. Explain the principle of operation of visible spectrophotometer with diagram and mention any three applications.
13. Explain the principle of operation of polarimeter with diagram and mention any three advantages.
14. Explain the principle of operation of auto analyzer with diagram.
15. (a) Draw and explain the block diagram of mass spectrometer.
(b) Derive the expression for mass charge ratio (m/e).
16. Explain the principle of operation of the liquid chromatography with a diagram and mention any three applications.
17. (a) Explain the operation of digital pH-meters with diagram.
(b) Describe conductivity cells with diagram.
18. Explain the principle of operation of scintillation counter with diagram and mention any three applications.

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