



C09-AEI-405

3415

BOARD DIPLOMA EXAMINATION, (C-09)
OCT/NOV—2015
DAEIE—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) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. List any three applications of pH measurement.
2. State the importance of the temperature compensating method in pH measurement.
3. Define viscosity.
4. Draw the electromagnetic spectrum.
5. List the types of monochromators.
6. State the principle of flame photometer.
7. List any three applications of polarimeter.

- * 8. List any three applications of thermal conductivity gas analyzer.
9. Define chromatography.
10. List any three applications of gas chromatography.

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain the principle of operation of conductivity meters with legible diagram. 7+3
12. Explain the principle of displacement type density measurement with a legible diagram. 7+3
13. List and explain any two types of visible detectors. 3+7
14. Explain double beam UV spectrophotometer with a legible diagram. 7+3
15. Explain the principle of refractometer with a legible sketch. 7+3
16. Explain the principle and construction of CO analyzer with a legible sketch. 4+3+3
17. Explain liquid chromatography with a neat sketch. 7+3
- * 18. (a) Draw the block diagram of digital pH meter. 5
- (b) Derive the expression for m/e for a mass spectrometer. 5
