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## BOARD DIPLOMA EXAMINATION, (C-16)

MARCH / APRIL — 2021

DAEIE — FOURTH SEMESTER EXAMINATION

ANALYTICAL INSTRUMENTATION

Time : Three Hours]

[Maximum Marks : 80

## PART-A

3×10=30

- Instructions :**
- (i) Answer **all** questions.
  - (ii) Each question carries **three** marks.
  - (iii) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Draw the block diagram of analytical instrumentation.
2. State the Beer-Lambert's law.
3. Draw the block diagram of Flame photometer.
4. State the principle of Auto analyzer.
5. State the principle of mass spectrometer.
6. Define the resolution of mass spectrometer.
7. Define the terms absorption and adsorption.
8. List the advantages of gas chromatography.
9. State the effect of temperature on pH.
10. List the types of radiations.

- \* **Instructions :**
- (i) Answer any **five** questions.
  - (ii) Each question carries **ten** marks.
  - (iii) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain Prism and Grating Monochromator with diagram.
12. Explain the principle of operation and application of UV spectrophotometer.
13. Explain the principle of operation and applications of spectrofluorometer.
14. Explain the principle of operation and applications of paramagnetic gas analyzer.
15. Derive the expression for mass charge (m/e) of mass spectrometer.
16. Explain the principle of operation and applications of liquid chromatography with diagram.
17. Explain the principle of operation of conductivity meter with diagram.
18. Explain the working of Scintillation counter detection method with diagram.

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