



C14-AEI-505

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BOARD DIPLOMA EXAMINATION, (C-14)
SEPTEMBER/OCTOBER - 2020
DAEIE—FIFTH 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. List the properties of Beta particles.
2. Draw the block diagram of scintillation counter.
3. Define molecular spectroscopy.
4. List any three applications of IR spectrophotometer.
5. State the principle of visible spectrophotometer.
6. Draw the block diagram of refractometer.
7. Define the resolution of mass spectrometer.
8. Draw the block diagram of mass spectrometer.
9. List the applications of gas chromatography.
10. Define chromatography.

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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 working of detection of neutrons with diagram.
12. Explain electromagnetic spectrum with diagram.
13. Explain the block diagram of analytical instrumentation.
14. Explain the principle of operation and applications of electro-chemical gas analyzer.
15. Explain the principle of operation and applications of thermal conductivity type analyzer.
16. Explain the principle of operation and applications of polarimeter.
17. Explain the operation of single deflection 180° mass spectrometer with diagram.
18. Explain the principle, description and applications of liquid chromatography.

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