



C14-AEI-505

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BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—2018
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 types of radiation.
2. List the properties of alpha particles.
3. Define the terms 'atomic spectroscopy' and 'molecular spectroscopy'.
4. State Beer-Lambert law.
5. List different types of Visible, UV, IR light sources.
6. State the principle of flame photometer.
7. List the advantages of mass spectrometer.
8. Define the resolution of a mass spectrometer.
9. Classify chromatography.
10. Define the terms 'absorption' and 'adsorption'.

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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 Geiger-Müller detection method with legible diagram.
12. Explain the block diagram of analytical instrumentation.
13. Explain the principle of operation of UV spectrophotometer and list the applications.
14. Explain the principle of operation of refractometer and list the applications.
15. Explain the principle of operation of paramagnetic gas analyzer and list the applications.
16. Explain the principle of operation of polarimeter and list the applications.
17. Draw the block diagram of a mass spectrometer and explain its each block.
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18. Explain the principle of operation of the gas chromatography with legible diagram.
