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C16-AEI-404

**6417**

**BOARD DIPLOMA EXAMINATION, (C-16)**

**JUNE/JULY—2022**

**DAEI - FOURTH SEMESTER EXAMINATION**

**ANALYTICAL INSTRUMENTATION**

*Time : 3 hours ]*

*[ Total Marks : 80*

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**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. State the principle of IR spectrometer.
2. List the different types of light sources.
3. Draw the diagram of polarimeter.
4. List the applications of auto analyzer.
5. State the principle of mass spectrometer.
6. Define resolution of mass spectrometer.
7. State the principle of liquid chromatography.
8. Define chromatography.
9. Define the term pH.
10. List the types of radiation.

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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 criterion for valuation is the content but not the length of the answer.

11. Explain the principle of operation of UV spectrometer.
12. Explain electromagnetic spectrum with diagram.
13. Explain the principle of operation of flame photometer.
14. Explain the principle of operation of electro chemical gas analyzer.
15. Derive the expression for mass charge (m/e) ratio of mass spectrophotometer.
16. Explain the principle of operation of gas chromatography with diagram.
17. Explain the operation of digital pH meter with diagram.
18. Explain the working of Geiger Muller detection method.

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