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4611**BOARD DIPLOMA EXAMINATION, (C-14)****JUNE-2019****DAEIE– FIFTH SEMESTER EXAMINATION****ANALYTICAL INSTRUMENTATION**

Time: 3 hours]

[Max. Marks :80

PART-A**10x3=30M**

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 any three properties of Beta particles.
- 2) List any three properties of gama particles.
- 3) Define the term atomic spectroscopy.
- 4) List any three types of Visible IR light sources.
- 5) Draw the block diagram of Analytical Instrumentation.
- 6) List any three applications of Flame Photometer.
- 7) Define the resolution of a mass spectrometer.
- 8) List any three advantages of mass spectrometer.
- 9) Define chromatography.
- 10) Differentiate between the terms absorption and adsorption.

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PART-B

5x10=50M

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Instructions: 1) Answer any **five** questions.
2) Each question carries **ten** marks.
3) Marks will be awarded to the content but not the length of the answer.

- 11) Explain the principle of operation of Scintillation counter with diagram.
- 12) Explain the principle of operation of visible Spectrophotometer with diagram.
- 13) Explain Prism Monochromator with a diagram.
- 14) Explain the principle of operation of Spectro fluourometer with diagram and mention any three applications.
- 15) Explain the principle of operation Thermal conductivity gas analyzer with diagram.
- 16) Explain the principle of operation of Interferometer with diagram.
- 17) Derive the expression for mass charge ratio (m/e).
- 18) Explain the principle of operation of the Liquid Chromatography with a diagram and mention any three applications.

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