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

Time: 3 hours

Max. Marks: 80

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

Instructions : 1) Answer **all** questions. Each question carries **three** marks
2) Answer should be brief and straight to the point and shall not exceed five simple sentences.

- 1) List the types of radiations.
- 2) List any three properties of Alpha Particles.
- 3) State Beer Lamberts law.
- 4) Define the term spectroscopy.
- 5) List different types of visible, UV and IR light sources.
- 6) List any three applications of Flame photometer.
- 7) List the principle of mass spectrometry.
- 8) List any three applications of mass spectrometer.
- 9) Define chromatography.
- 10) List any three advantages of the gas chromatography.

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PART -B

10x5=50M

Instructions : 1) Answer any **three** question and each question carries **ten** marks.

2) Answer should be comprehensive and the criteria for valuation is the content but not the length of the answer.

- 11) Explain the principle of operation of Scintillation counter method with a diagram.
- 12) a) Draw the block diagram of Analytical Instrumentation. 3M
b) Explain the principle of operation of U.V spectrophotometer with a diagram. 7M
- 13) Explain the principle of operation of IR spectrophotometer with a diagram.
- 14) Explain the principle of operation of paramagnetic gas analyzer with diagram.
- 15) Explain the principle of operation of Refractometer with a diagram.
- 16) Explain the principle of operation of Polarimeter with a diagram.
- 17) Derive the expression for mass to charge ratio in a mass spectrometer.
- 18) Explain the principle of operation of gas chromatography with a diagram.

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