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Total Number of Pages: 02

B.Tech
PEEI5301

6th Semester Regular / Back Examination 2016-17

Analytical Instrumentation

BRANCH: AEIE, EIE, IEE, MINERAL

Time: 3 Hours

Max Marks: 70

Q.CODE: Z677

**Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.**

- Q1 Answer the following questions: (2 x 10)**
- a) What is buffer solution?
 - b) Write down the basic elements of Analytical instrument.
 - c) Name different types of radio emissions.
 - d) What is intelligent Analytical instrument?
 - e) Differentiate accuracy and precision.
 - f) Name different IR sources.
 - g) What is the use of Collimators in X-ray spectrometer?
 - h) Name various parts of gas chromatograph.
 - i) What are different types of X-ray?
 - j) Name different Radiation detector.
- Q2**
- a) Explain PC based analytic instrumentation with suitable diagram. (2)
 - b) Briefly explain roles and functions of essential part of flame photometer. (8)
- Q3**
- a) What is Biosensor? Explain with suitable diagram. (5)
 - b) Explain Beer-Lamberts Law. (5)
- Q4**
- a) Explain the working of Double-beam Filter Photometer. (5)
 - b) What is Scintillation counter? What is its use? (5)
- Q5**
- a) Explain the working of Multi-channel. (5)
 - b) Discuss the working of Microprocessor-based Spectrophotometers. (5)
- Q6**
- a) Differentiate between colorimeter and Photometers. (5)
 - b) Discuss the Principle of NMR and different types of NMR used for analysis (5)

- Q7** With suitable diagram explain chromatography. **(10)**
- Q8** Write short answer on any TWO: **(5 x 2)**
- a) NMR
 - b) Paramagnetic Oxygen Analyzer
 - c) PH meter.