6E3043

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6E3043

B. Tech. VI-Sem. (Back) Exam., April/May-2016
Electronic Instrumentation & Control Engineering
6EI2 (O) Analytical & Environmental Instrumentation

Time: 3 Hours **Maximum Marks: 80**

Min. Passing Marks (Back): 24

Instructions to Candidates:-

*Attempt any **five questions,** selecting **one question** from **each unit**. All Questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly.*

Units of quantities used/ calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL 2. NIL

UNIT-I

Q.1 What in absorption spectroscopy? Discuss Atomic Absorption spectroscopic technique in detail. [16]

OR

Q.1 Attempt any two of the following: [16]

(a) X – ray spectroscopy.

(b) Photo – acoustic spectroscopy.

(c) Microwave spectroscopy and its applications.

(d) The ion sourer of mass spectrometers.

UNIT-II

Q.2 (a) Explain the construction and working of Infrared absorption gas analyzer. [8]

(b) Discuss ultraviolet absorption analyzer and its advantages and applications. [8]

OR

Q.2 Attempt any two of the following:

(a) Paramagnetic oxygen analyzer. [8]

(b) Thermal conductivity analyzer. [8]

(c) Chemiluminescence analyzer. [8]

UNIT-III

Q.3 What in the principle of chromatographic separation. Discuss parts involved in gas chromatography. [16]

OR

Q.3 Discuss types of liquid chromatography, with reference to column and detector septum. [16]

UNIT-IV

Q.4 (a) Discuss major air pollutants, what are harmful effects of these pollutants on living beings. [8]

(b) Explain the construction and working of smoke monitoring system. [8]

OR

Q.4 Write notes on any two of the following:

(a) Carbon monoxide monitoring system. [8]

(b) Sculpture dioxide analyzer. [8]

(c) Hydrocarbon analyzer. [8]

UNIT-V

Q.5 What is pH? Explain principle of pH measurement; discuss Electrodes used for pH measurement. [16]

OR

Q.5 Write notes on any two of the following:

(a) Ammonia analyzer.

(b) Silica analyzer.

(c) Sodium analyzer.

(d) Dissolved oxygen analyzer.
