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Question Paper Code: 31578

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

Elective

Electronics and Instrumentation Engineering

01UEI922 - ENVIRONMENTAL MONITORING INSTRUMENTS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Indicate the different instrumentation methodologies of environmental monitoring.
2. Give the type pollutant analysed using UV and visible spectrophotometer.
3. Write the three types of water quality monitoring parameters.
4. Specify any four of requirement of water treatment.
5. List the common elements of ground water sampling.
6. Give any four monitoring well drilling methods.
7. Mention the four types of waste water treatment plant.
8. How BOD is determined for waste water treatment?
9. Tabulate any two air pollutant material with their effects on human health.
10. Give any four method of air pollutant detector.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain how gas chromatography is used in environmental monitoring. (16)

Or

(b) Describe the total hydrocarbon analyzer using flame ionization detector for environmental monitoring. (16)

12. (a) With necessary diagram, explain the conductivity analyzer circuits for water quality monitoring. (16)

Or

(b) (i) Tabulate the best use of surface water with their quality. (8)

(ii) Explain about the process design for water quality monitoring. (8)

13. (a) With neat diagram explain the following methods to ground water level monitoring and measurement. (i) Pressure transducer method (ii) Bubblers method (iii) Steel tape method (iv) Electric sounder method. (16)

Or

(b) What are major categories of remediation action of soil and ground water pollution? Describe the pump-and-treat method of removal action in soil and ground water pollution. (16)

14. (a) Explain the composite type sampling techniques for waste water treatment. (16)

Or

(b) What are all the techniques involved in waste water treatment? Briefly discuss the each technique. (16)

15. (a) Describe the optical method of air pollutant monitoring for instrumentation system. (16)

Or

(b) With neat diagram explain the coulometer method of NO₂ analyzer for air pollution monitoring. (16)