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Question Paper Code: 31586

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

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 necessity of sensors for control of environment.
2. What is meant by photo-ionization?
3. Write any four parameters associated with water quality.
4. Mention any two applications of conductivity analyzers
5. Specify the need for ground water monitoring.
6. Define the term 'Pollutant'.
7. Give any two minimum sampling requirements apply to a waste water treatment facility.
8. List out the important stages involved in waste water treatment.
9. Write the principle of detecting air pollution using piezo-electric oscillations method.
10. Give any two air pollution monitoring instruments.

PART - B (5 x 16 = 80 Marks)

11. (a) Describe the working principle of ultraviolet and total hydrocarbon analyzers for environmental monitoring. (16)

Or

- (b) With neat sketch, explain the principle and working of photo ionization detectors to detect environmental conditions (16)
12. (a) Explain how thermal conductivity analyzer is used for water quality monitoring and analysis. (16)

Or

- (b) Discuss the principle of operation of pH meter with neat diagram and mention its applications (16)
13. (a) Illustrate any one method of level measurement in ground water monitoring wells. (16)

Or

- (b) Describe the techniques for assessing soil and ground water pollution. (16)
14. (a) Provide a report on anyone type of waste water sampling with necessary diagrams. (16)

Or

- (b) With neat sketch, explain in detail about the instrumentation setup for waste water management. (16)
15. (a) Describe the operation of Coulometry for air pollution monitoring with required diagrams. (16)

Or

- (b) Discuss in detail about the role of laser instruments in air pollution monitoring. (16)