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MEVE–018

MASTER OF SCIENCE
(ENVIRONMENTAL SCIENCE)
(MSCENV)
Term-End Examination
December, 2023

MEVE–018 : INSTRUMENTATION TECHNIQUES FOR ENVIRONMENTAL MONITORING

Time : 3 Hours *Maximum Marks : 100*

Note : *Answer any* ***ten*** *questions. All questions carry equal marks.*

1. What are different methods employed in water sampling ? Explain.
2. How does the TLC work ? Explain its applications.
3. Explain the following with suitable examples :
   (a) Cytophotometry
   (b) Polymerase chain reaction
4. Describe the applications of capillary electrophoresis in analysis of environmental pollutants.

5. Explain Bragg's Law.

6. What are the applications of microarrays in Environmental Studies ?

7. What is a Biosensor ? Explain about Electrochemical Biosensors.

8. Classify the chromatographic techniques on the basis of nature and physical state of mobile and stationary phase.

9. Enlist various types of blotting methods. Explain the blotting method used to detect protein in a given sample.

10. Explain the principle of 2-D gel electrophoresis.

11. What are Nanotweezers ? What are their applications ?

12. Define Cytophotometry. Explain its working principle.

13. Define Fixation. Explain the factors which affect fixation.

14. Explain the following :

    (a) Applications of NMR spectroscopy

    (b) Applications of ESR spectroscopy