

Bachelor of Science (B.Sc. Part-III) Fifth Semester  
**B.Sc. 3519 - Environmental Science Paper-I (Environmental Engineering)**

P. Pages : 2

Time : Three Hours



**GUG/W/18/1309**

Max. Marks : 50

- Notes :
1. All questions are compulsory and carry equal marks.
  2. Illustrate the answers with suitable diagrams and examples.

1. Describe soil sampling by quartering method. How collection, handling and preservation of soil sample is carried out? 10

**OR**

What is gas chromatography? State principle involved in it. Discuss components of HPLC.

2. Describe operational problems and maintenance procedure for fabric filter and ESP. 10

**OR**

State principle of environmental management. Discuss nature and need for management principle.

3. a) Describe in brief dust fall jar method. 2½x4=10  
b) Discuss gravimetry as an analytical method.  
c) How maintenance of screen and grit chamber is carried out?  
d) Give characteristics of a sound plan.

**OR**

- e) Discuss site selection criteria for water sampling in a lake.  
f) Give nature and importance of error in environmental analysis.  
g) Describe operation and maintenance of aerators.  
h) Write an account on corporate social responsibility.

4. a) Describe method for moisture estimation in a solid waste sample. 2½x4=10  
b) The titre of a solution in a volumetric experiment was determined by six titrations the results of the experiment were : 12.25, 12.24, 12.30, 12.28, 12.25 and 12.26. Calculate mean, median and spread.  
c) Discuss operation troubles and their prevention in settling tank.  
d) Explain process of decision making.

**OR**

- e) How sampling locations were selected for a stack sampling?
- f) State principle involved in atomic absorption spectrophotometer along with its applications.
- g) Discuss maintenance of Clariflocculator.
- h) Give advantages and limitations of planning.

5. Answer in 2-3 lines **any ten:**

**1x10=10**

- a) What is isokinetic condition?
- b) Give NAAQS w.r.t. SO<sub>x</sub>.
- c) Name the device used for noise sampling.
- d) What is colorimetry?
- e) Which lamps are used in double beam spectrophotometer?
- f) Define error.
- g) What are operation problems in dosing tank?
- h) How sludge age is determined?
- i) Why seed transfer is essential in aeration tank?
- j) Give objectives of environmental management.
- k) What is rationality in decision making?
- l) Enlist steps in planning.

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