

Seat No. : _____

AG-103

April-2016

M.Sc., Sem.-IV

**510 CHEA : Chemistry
(Environmental Chemistry)**

Time : 3 Hours]

[Max. Marks : 70

1. Answer the following : **14**

(A) Write a note on Environmental Impact Assessment.

OR

Discuss in brief various sources of error in trace analysis.

(B) Explain Dissolution and Decomposition of samples with examples.

OR

Explain how separation of species from bulk of sample is being done.

2. Answer the following : **14**

(A) Discuss the process for the determination of carbon monoxide by non-dispersive IR analyzer.

OR

Explain the determination of aromatic hydrocarbons in exhaust petrol and air.

(B) Enlist the sources of oxides of nitrogen and discuss their impact on human health and environment.

OR

Explain the determination of oxides of sulphur in the atmosphere.

3. Answer the following : **14**

(A) Explain the determination of inorganic nitrogen in water.

OR

Write a note on oxygen balance in natural water.

(B) Explain the determination of lead as a heavy metal in natural water.

OR

Explain the determination of BOD and COD in waste water.

4. Answer the following : 14
- (A) Describe the analysis of N, P, K, Ca and Mg in plant tissue.
- OR**
- Discuss the process for the determination of pH of soil sample.
- (B) Explain the determination of cobalt in plant tissue.
- OR**
- Explain the determination of boron in plant tissue.
5. Answer the following in short (each carry **one** mark) : 14
- (a) Define Chemiluminescence.
- (b) Give the composition of borosilicate glass used for laboratory ware.
- (c) Define desorption.
- (d) Give the full form of MAC and TCDD.
- (e) Enlist the sources of hydrogen sulfide and sulfur dioxide in the atmosphere.
- (f) Which day is celebrated as ozone protection day ?
- (g) Give the composition of dry air.
- (h) How is TISAB solution prepared ?
- (i) Give the MAC values for phenol and nitrite.
- (j) Draw a neat and labelled diagram of typical soil profile.
- (k) What are the extraction constants for copper and lead dithizonates in carbon tetrachloride ?
- (l) Define fluorescence.
- (m) Name the apparatus used for ammonia steam distillation.
- (n) Diagrammatically summarize the most commonly used separation techniques making use of two phase systems.
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