



Seat No. : \_\_\_\_\_

**TD-115**  
**M.Sc. Sem.-IV**  
**May-2013**  
**510 CHEA Analytical Chemistry**  
**(Environmental Chemistry)**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Instruction :** All questions are compulsory and carry equal marks.

1. Answer any **two** of the following : **14**
- (a) Describe the process for the dissolution and decomposition of a sample.
  - (b) What is the necessity of Environmental Impact Assessment ?
  - (c) Define error and explain various types of error with appropriate illustration.
  - (d) Explain the process of separation of species from bulk of sample.
2. Answer any **one** of the following : **14**
- (a) (i) Discuss the determination of aromatic hydrocarbon in exhaust, petrol and air.  
(ii) Explain the determination of low level of carbon monoxide by catalytic conversion.
  - (b) (i) Describe the sources of oxides of nitrogen in the atmosphere and its impacts on environment and human health.  
(ii) Discuss the determination of oxides of nitrogen in the atmosphere.
3. Answer any **one** of the following : **14**
- (a) Discuss the determination of DO, BOD and COD.
  - (b) Explain (i) Oxygen Balance in natural water (ii) Hydrological cycle and pollution.

4. Answer any **two** of the following : **14**
- (a) Discuss the method for pH determination of soil.
  - (b) Explain the analysis of plant tissue for N, P and K.
  - (c) Explain the determination of Cobalt in plant tissue.
  - (d) Explain the determination of Mercury in Urine by Cold Vapour and Hydride generation System in AAS.
5. Answer the following in short (each of **two** marks) : **14**
- (a) Discuss the toxicity of CO<sub>2</sub>, NO<sub>2</sub> and SO<sub>2</sub> on human health.
  - (b) Give the composition of dry air.
  - (c) How TISAB solution is prepared ?
  - (d) Give the methods for the determination of Phosphate and Chloride.
  - (e) Give the MAC values for (i) Ammonia (ii) Nitrate (iii) Nitrite and (iv) Phosphate.
  - (f) Which gases are separated using active charcoal and silica gel.
  - (g) Define chemiluminescence.
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