



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/M.Tech. (EIE)/SEM-2/EIEM-205(a)/2011**

**2011**

**INSTRUMENTAL STUDIES OF ENVIRONMENT  
AND ITS CONTROL**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

Answer any five questions.  $5 \times 14 = 70$

1. a) What is ecosystem ?  
  
b) Discuss about a Carbon cycle present in the atmosphere.  
  
c) Explain the operation of Catharometer with suitable example of pollutant measurement.  $2 + 4 + 8$
2. a) What is the necessity of waste water treatment ?  
  
b) Describe any waste water treatment method.  
  
c) Discuss the working principle of conductivity meter in brief.  $3 + 7 + 4$



3. a) How is Absorbance related with Transmittance ?  
b) Explain how you can measure pollutant concentration by an IR analyzer.  
c) Distinguish between IR and UV analyzers. 2 + 10 + 2
4. a) Explain In situ and Extractive type analyses with their relative merits and demerits.  
b) Discuss the objectives of sample handling system.  
c) Name four sample handling system components.  
8 + 4 + 2
5. a) Briefly discuss the effects of noise at the physical, physiological and psychological levels ?  
b) Describe the possible methods of control of noise pollution. 7 + 7
6. a) Name the different types of chromatography.  
b) How can methylene component be identified by GC ?  
c) Explain ECL in chromatography principle.  
d) Draw the schematic diagram of a GC and describe its working principle. 2 + 2 + 2 + 8



7. a) Define pollutant.
- b) Describe the importance of fabric filter systems in pollution control.
- c) Write the merits and demerits of using ESP. 2 + 6 + 6
8. Answer any *two* of the following : 7 × 2
- a) Disposal of solid wastes
- b) Effects of air pollution
- c) Pollution control in petroleum refineries
- d) Venturi scrubber
- e) Oxygen analyzer.
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