



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.TECH/CHE(N)/SEM-3/CH(CHE)-301/2012-13**

**2012**

**BASIC ENVIRONMENTAL ENGINEERING &  
ELEMENTARY BIOLOGY**

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.*

**GROUP - A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for any *ten* of the following :

10 × 1 = 10

i) Acid rain is caused by oxides of

- |                    |                    |
|--------------------|--------------------|
| a) SO <sub>2</sub> | b) NO <sub>2</sub> |
| c) CO <sub>2</sub> | d) (a) & (b) both. |

ii) CFC is

- a) Chlorofluorocarbon
- b) Centre for fuel control
- c) Carcinogenic fluoride compound
- d) Carcinogenic fuel chemical.

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- iii) Montreal Protocol signed in September 1987, aims at the control of
- a) Use of greenhouse gases
  - b) Use of chemical pesticides
  - c) Use of ozone depleting substance
  - d) Use of carbon dioxide gases.
- iv) Converting solid waste into new products by using resources contained in the discarded material is
- a) Waste management
  - b) Reuse
  - c) Recycling
  - d) Hazardous waste management.
- v) El Niño is a Spanish word which means
- a) Climate change
  - b) Earth's rotation
  - c) Little boy
  - d) Extremely hazardous.
- vi) According to United Nations the World Environment Day 2012 is dedicated to
- a) Water Management
  - b) Forests
  - c) Green Economy
  - d) Bio-diversity.
- vii) Haemoglobin is a ..... protein.
- a) Catalytic
  - b) Protective
  - c) Regulatory
  - d) Transport.
- viii) The size of RSPM is
- a) 10  $\mu$
  - b) 20  $\mu$
  - c) 100  $\mu$
  - d)  $< \text{or} = 10 \mu$ .
- ix) Glycolysis is a ..... process.
- a) Catabolic
  - b) Anabolic
  - c) Regulatory
  - d) Transport.





8. a) State Darcy's law. 2  
 b) What are the probable cause of water pollution by arsenic ? 2  
 c) What remedial measures may be taken to control arsenic pollution ? 3  
 d) What do you mean by water softening. What are the different methods of water softening ? 2 + 2  
 e) The dilution factor  $P$  for an unseeded mixture of wastes and water is 0.030. The DO of the mixture was initially 9.0 mg/l and after 5 days it has dropped to 3.0 mg/l. The reaction rate constant is 0.22/day. Calculate  
 i) The 5 day BOD of the wastes  
 ii)  $C_0$   
 iii) The remaining oxygen demand after 5 days. 4
9. a) Define noise pollution. 1  
 b) Discuss its various sources. 2  
 c) Suggest two methods of controlling the noise pollution. 2  
 d) What is the noise threshold limit value ? 2  
 e) Calculate the intensity of 50 dB sounds. ( given reference intensity -  $10^{-12} \text{ Wm}^{-2}$  ). 3  
 f) What is the composition of lithosphere ? 3  
 g) What are the different types of solid wastes ? 2
10. Discuss the methodology of Collection and transfer of Solid Waste practiced in the urban city of India. State how incinerator is helpful in solving solid waste management problem in a crowded city. What is e-Waste ? 5 + 5 + 5
11. Write brief notes on any *three* of the following : 3 × 5 = 15  
 a) Cyclone separator  
 b) Ventury Scrubber  
 c) Hydraulic gradient  
 d) Trickling filter  
 e) Hzardous waste management.

