



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/MCA/SEM-4/HU (MCA)-401/2012**

**2012**

**ENVIRONMENT & ECOLOGY**

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 :

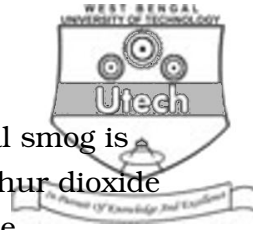
10 × 1 = 10

- i) WAS stands for
  - a) Waste Activated System
  - b) Waste Affected Slurry
  - c) Waste Activated Sludge
  - d) Waste Activation Stock.
- ii) Which one is a primary pollutant ?
  - a) Smoke
  - b) Carbon monoxide
  - c) PAN
  - d) Carbon dioxide.
- iii) The most potentially renewable energy source is
  - a) sunlight
  - b) wind
  - c) tidal energy
  - d) biomass.

4427

[ Turn over

CS/MCA/SEM-4/HU (MCA)-401/2012



- iv) The main component of photochemical smog is
- a) water vapor                      b) sulphur dioxide  
c) oxides of nitrogen              d) ozone.
- v) Montreal Protocol is related to
- a) water pollution                  b) use of CFCs  
c) land pollution                    d) noise pollution.
- vi) 'Itai Itai' disease was caused by
- a) zinc                                  b) cadmium  
c) lead                                  d) mercury.
- vii) Trickling filter is classified under
- a) primary treatment              b) secondary treatment  
c) tertiary treatment                d) none of these.
- viii) Air pollutant which reduces oxygen carrying capacity of haemoglobin is
- a) ammonia                            b) hydrogen sulphide  
c) carbon monoxide                d) none of these.
- ix) Total interacting of animals and plants, in any well defined area like pond is called
- a) eco system                        b) biosphere  
c) eco community                    d) biome.
- x) Industrial effluents do not contain one of the following :
- a) Heavy metals  
b) Organic pollutants ( oil, fats, etc. )  
c) Inorganic pollutants ( acids, cyanides )  
d) Silt and mud.
- xi) Coliform test is performed to detect
- a) *Salmonella*                        b) *Bacillus*  
c) *E.coli*                                d) none of these.
- xii) Vermicomposting is not a kind of
- a) waste substance treatment  
b) way of energy generation  
c) a kind of organic culture  
d) Tricky method to control soil pH.

CS/MCA/SEM-4/HU (MCA)-401/2012



**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following.  $3 \times 5 = 15$

2. What is noise pollution ? Discuss the adverse effects of noise on human health.  $2 + 3$
3. define food chain. Discuss grazing food chain with examples.  $2 + 3$
4. Define bio-geochemical cycle. Describe the nitrogen cycle in brief.  $2 + 3$
5. Differentiate between the logistic and exponential population growth.  $2 \times 2 \frac{1}{2}$
6. Write a short note on the achievements of Montreal Protocol.

**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

7. a) Distinguish between :
  - i) Pollutant and Contaminant
  - ii) Primary pollutant and Secondary pollutant.  $2 + 2$
- b) Name the regions of the atmosphere based on thermal structure. State their respective altitudes, temperature ranges and their principal constituents. Discuss the special features of the troposphere.  $2 + 6 + 3$
8. a) What is lithosphere ?  $2$
- b) What are the different types of solid wastes ?  $4$
- c) Discuss the methods of municipal waste disposal.  $4$
- d) Dsicuss special cases in disposing biomedical wastes.  $5$

CS/MCA/SEM-4/HU (MCA)-401/2012



9. a) What is environmental lapse rate and adiabatic lapse rate ? 4
- b) Discuss the phenomenon of formation of the ozone hole in the stratosphere. 6
- c) How the photochemical smog is formed ? How does it differentiate from the London smog. 5
10. a) Should carbon dioxide be treated as an air pollutant ? 1
- b) Classify the air pollutants depending upon their mechanisms of formation. Give examples. 3
- c) Discuss atmospheric dispersion taking the examples of smokestack plumes. 8
- d) Write down the advantage and disadvantage of electrostatic precipitator ? 3
11. a) What do you mean by primary and secondary treatment of wastewater ? Compare trickling filter with activated sludge system. 5
- b) How nitrogen is removed from wastewater ? 3
- c) Define BOD and COD stating the principles of these tests. 5
- d) State the effects of low DO on aquatic life. 2
12. Write short notes on any *three* of the following : 3 × 5
- a) Biodegradation
- b) Renewable Energy sources
- c) Photochemical smog
- d) Arsenic pollution
- e) Noise pollution.

=====