Name :	
Roll No. :	A Description of Explant

Invigilator's Signature : .....

# CS/MCA/SEM-4/HU (MCA)-401/2011 2011 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 :  $10 \times 1 = 10$ 
  - Air pollutant, which reduces oxygen carrying capacity of haemoglobin, is
    - a) carbon monoxide
    - b) ammonia
    - c) hydrogen sulphide
    - d) none of these.
  - ii) The decomposers could be
    - a) amoeba b) fungi
    - c) earthworm d) all of these.

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iii)	Earth hour is celebrated to create consciousness about					
	a)	water pollution	b)	noise pollution		
	c)	global warming	d)	deforestation.		
iv)	The	saturated value of DO	is apj	proximately		
	a)	9 mg/L	b)	20 mg/L		
	c)	6 mg/L	d)	5 mg/L.		
v)	The	noise threshold limit va	alue o	of sound level 110 dB is		
	a)	30 minutes	b)	15 minutes		
	c)	2 hrs	d)	8 hrs.		
vi)	Ozo	ne is an essential comp	onen	t of		
	a)	troposphere	b)	stratosphere		
	c)	mesosphere	d)	ionosphere.		
vii)	In a seeded BOD test the dilution water contains			n water contains		
	a)	distilled water				
	b)	distilled water contain	ing s	ome microorganisms		
	c) distilled water containing some waste					
	d) none of these.					
viii)	Minamata disease occurs due to					
	a) arsenic pollution					
	b)	lead pollution				
	c)	mercury pollution				
	d)	cadmium pollution.				

ix)				A-4/HU (MCA) 401/2011 used for disinfection of	
	a)	Ozone	b)	Hydrogen peroxide	
	c)	Chlorine	d)	None of these.	
X)	Blue baby syndrome is related to				
	a)	nitrate	b)	sulphate	
	c)	phosphate	d)	carbonate.	
xi)	Biotic factor of ecosystem is				
	a)	plants & animals	b)	solar energy	
	c)	temperature	d)	soil.	
xii)	Incineration is a disposal method of				
	a)	water pollutants	b)	solid wastes	
	c)	air pollutants	d)	none of these.	

### **GROUP – B**

## (Short Answer Type Questions)

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

- 2. Define environment. How are environmental components classified ?
- 3. Define the term 'ecology'. Describe oxygen cycle.
- 4. Name two hazardous chemicals present in waste water. Write down their source and biochemical effects.

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- 5. What is greenhouse effect ? How does it warming ?
- 6. What do you mean by hardness of water ? Can hard water be used in boilers and laundries ?

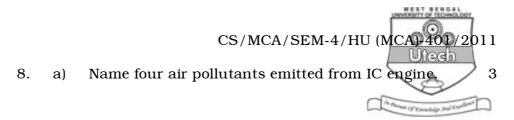
#### **GROUP – C**

### (Long Answer Type Questions)

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

- 7. a) What is noise pollution ? Discuss the adverse effects of noise on human health. 1+2
  - b) Define noise threshold limit value. 2
  - c) In a work area the noise levels are read as 95 dBA for
    2 hrs a day, 90 dBA for 4 hrs a day, 80 dBA for
    remaining 2 hrs a day and permissible duration of each
    noise level is 95 dBA for 2 hrs, 90 dBA for 4 hrs and
    80 dBA for 16 hrs. Find out the noise threshold limit
    value and predict whether the noise level is within
    permissible limit or not.
  - d) Briefly explain control measures at receiver's end to reduce noise pollution.
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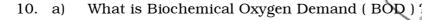


b)	Why do CO is taken as major air pollutant	? What is its
	source ? Write its effect on living being.	How can its
	emission be controlled ?	2 + 2 + 2 + 2

c) Compare photochemical smog and London smog. 4

9. a) Define "Energy Flow" in eco-systems. In an eco-system, although the inorganic nutrients are recycled, the flow of energy is not. Justify.

- b) State the composition of lithosphere. Mention the different types of solid wastes. 2+2
- c) Write down the disadvantages of Land-filling. 2
- d) Define the terms Habitat, Population, Bio-community,
   Ecological Niche and Species. 5
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b) State the importance of adding azide in water samplesbefore estimation of BOD.

2

c) Derive the equation

$$BOD_w = \frac{\left(DO_i - DO_f\right) - \left(B_i - B_f\right)(1 - P)}{P}$$

- where,  $DO_i$  = initial dissolved oxygen of the mixture of waste water and seeded dilution water
  - $DO_f$  = final dissolved oxygen of the mixture of waste water and seeded dilution water after 5 day period
  - $B_i$  = Initial dissolved oxygen in the seeded dilution water ( Blank )
  - $B_f$  = Final dissolved oxygen in the seeded dilution water ( Blank ). 5
- d) Why is the value of COD greater than the value of BOD for a given water sample ? Why is the value of BOD less than theoretical oxygen demand ?
  2 + 3

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CS/MCA/SEM-4/HU (MCA) 400/2011 11. Write short notes on any *three* of the following : 3 × 5 a) Confined and unconfined aquifer

- b) Mufflers
- c) Harmful effects of CO and  $SO_2$
- d) Catalytic converter
- e) Ecological balance and instability.

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