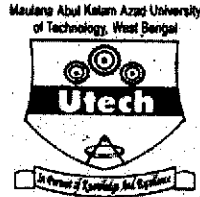


CS/BCA/EVEN/SEM-4/HU-401(BCA)/2015-16



**MAULANA ABUL KALAM AZAD UNIVERSITY OF
TECHNOLOGY, WEST BENGAL**
Paper Code : HU-401(BCA)
ENVIRONMENT AND 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 : $10 \times 1 = 10$
- The main source of water in India is
 - Rain water
 - Ground water
 - Surface water
 - Sea water.
 - Where is the height of troposphere 12 km ?
 - Equator
 - Pole
 - Arctic Circle
 - Antarctic Circle.
 - If the temperature of water increases then the dissolved oxygen content in water
 - decreases
 - remains same
 - increases
 - none of these.
 - What is the normal hearing frequency range ?
 - 60 Hz — 60 MHz
 - 20 Hz — 20 kHz
 - 20 Hz — 20 MHz
 - 60 Hz — 60 kHz.

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- v) Natural reservoirs of water below the earth's surface is
- a) Aquiclude
 - b) Aquifer
 - c) Aquitard
 - d) Aquident.
- vi) Hertz is the unit of what ?
- a) Light
 - b) Sound
 - c) Water
 - d) Wind.
- vii) Taj Mahal, the great historical monument is mainly affected by
- a) H_2SO_4
 - b) HCl
 - c) HNO_3
 - d) HNO_2 .
- viii) The primary pollutants responsible for photochemical smog formation are
- a) SO_2 and NO_2
 - b) Hydrocarbon and NO_x
 - c) PAN and Hydrocarbon
 - d) Aldehyde and PAN.
- ix) Bhopal Gas Tragedy occurred on
- a) December, 1984
 - b) January, 1986
 - c) November, 1985
 - d) December, 1983.
- x) The catalyst used in catalytic converters is finely divided
- a) Ni
 - b) Pt
 - c) Pd
 - d) Fe.
- xi) Kyoto protocol is related to
- a) Land Degradation
 - b) Water resource management
 - c) Bio-diversity
 - d) None of these.

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- xii) Blue Baby syndrome is related to
- a) Sulphate
 - b) Nitrate
 - c) Phosphate
 - d) Carbonate.

GROUP - B

(Short Answer Type Questions)

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

2. What are the effect of noise pollution on public health ?
Classify the source of noise pollutions. $2\frac{1}{2} + 2\frac{1}{2}$
3. Sound can be utilized for beneficial purpose also.
Explain.
4. If the 5 days BOD at 37°C is 200 mg/L and if the rate of deoxygenating is 0.17/day, what is the ultimate oxygen demand and oxygen remaining after 5 days ?
5. What is SPM ? State the harmful effects of SPM in the environment. $1 + 4$
6. Explain different types of biotic and abiotic components of environment with examples.

GROUP - C

(Long Answer Type Questions)

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

7. a) Explain why composite technique is better than incineration technique of municipal solid waste disposal. 4
- b) Distinguish between photochemical smog and London smog. 4
- c) Define ODS with two examples. 3
- d) Where is catalytic converter used ? State the catalysts used and reaction conditions maintained in a catalytic converter. 4

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8. What is activated sludge ? Describe the activated sludge treatment process of sewage with a neat flow diagram. 3 + 12
9. a) Define environmental degradation and explain the concept.
b) Explain the relationship between population and pollution.
c) Briefly mention the role of NGO's in case of environment protection. 5 + 5 + 5
10. What is Smog ? What is the difference between Sulphurous Smog and Photochemical Smog ? How is PAN formed ? What are the effects of Smog on living organisms ? 2 + 5 + 4 + 4
11. Write short notes on *three* of the following : 3 × 5
- a) Arsenic pollution, its biochemical effects and remedial measures.
 - b) Nitrogen cycle.
 - c) Hydrological cycle.
 - d) Trickling filter method of waste water treatment.
 - e) Electrostatic precipitator.
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