

# Environmental and Sustainability

**Subject Code: BE06**

**Date: 2025-03-15**

**Subject Name: Environmental and Sustainability**

**Time Duration: 135.0 minutes**

**Total Marks: 108**

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## **Instructions:**

1. Stable Internet Required: Ensure a good connection.
  2. Use Allowed Devices: Only a laptop/PC; no mobile phones or smartwatches.
  3. No Switching Tabs: Changing windows may lead to disqualification.
  4. Answer all questions within the given time limit. No extra time will be provided.
  5. Submit the exam before the deadline, as responses will not be accepted afterward.
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**The reason for Sea Level rise is**

**Marks: 2**

- ☐ Depletion of ozone layer
- ☐ Global warming
- ☐ Smog
- ☐ Acid Rain

**The type of generator used in HAWT which supply power to the grid line is**

**Marks: 2**

- ☐ Synchronous Induction Generator
- ☐ D.C Generator
- ☐ A.C. Generator
- ☐ Asynchronous Generator

**Atmosphere of big cities is polluted by**

**Marks: 2**

- ☐ Household Waste
- ☐ Radioactive Fallout
- ☐ Pesticides
- ☐ Automobile Exhaust



### **BOD Measures**

**Marks: 2**

- ☐ content of bacteria
- ☐ Content of inorganic matter
- ☐ Carbonic matter in domestic sewage
- ☐ OUD

### **BOD stands for**

**Marks: 2**

- ☐ Biochemical Oxygen Dissolution
- ☐ Biochemical Oxygen Demand
- ☐ Biochemical Oxidation Demand
- ☐ Biological Oxygen Demand

### **The component of environment made of sea, rivers, lakes, etc is called**

**Marks: 2**

- ☐ Atmosphere
- ☐ Hydrosphere
- ☐ Biosphere
- ☐ Lithosphere

### **In which atmospheric layer do most cloud form ?**

**Marks: 2**

- ☐ Stratosphere
- ☐ Atmosphere
- ☐ Mesosphere
- ☐ Troposphere



**Which type of clouds are responsible for thunderstorm**

**Marks: 2**

- ☐ Cirrus
- ☐ Stratus
- ☐ Cumulonimbus
- ☐ Nacreous

**Which is the lowest layer of the atmosphere**

**Marks: 2**

- ☐ Stratosphere
- ☐ Mesosphere
- ☐ Troposphere
- ☐ Thermosphere

**The ozone layer is mainly found in which atmospheric layer**

**Marks: 2**

- ☐ Troposphere
- ☐ Stratosphere
- ☐ Mesosphere
- ☐ Exosphere

**In which layer do most airplanes fly ?**

**Marks: 2**

- ☐ Stratosphere
- ☐ Troposphere
- ☐ Thermosphere
- ☐ Mesosphere



**The hottest layer of the atmosphere is**

**Marks: 2**

- ☐ Troposphere
- ☐ Stratosphere
- ☐ Thermosphere
- ☐ Mesosphere

**Which layer is known as the "ionosphere" due to its charged particles ?**

**Marks: 2**

- ☐ Troposphere
- ☐ Stratosphere
- ☐ Thermosphere
- ☐ Mesosphere

**The outermost layer of the Earth's atmosphere is called ?**

**Marks: 2**

- ☐ Troposphere
- ☐ Mesosphere
- ☐ Thermosphere
- ☐ Exosphere

**In a food chain**

**Marks: 2**

- ☐ energy flows from tropic level-1 to tropic level-4
- ☐ energy flows from tropic level-4 to tropic level-1
- ☐ energy does not flow
- ☐ energy flows from tropic level-4 to tropic level-3



**Which fuel used in automobiles produce least pollution ?**

**Marks: 2**

- ☐ CNG
- ☐ LPG
- ☐ Diesel
- ☐ Petrol

**Coal is the main contributor of**

**Marks: 2**

- ☐ CO■
- ☐ SO■
- ☐ N■
- ☐ CO

**Which gas is mainly responsible for green house effect ?**

**Marks: 2**

- ☐ CO■
- ☐ CFC
- ☐ CH■
- ☐ N■O

**Hydrogen fuel cell**

**Marks: 2**

- ☐ produce electric power by burning of hydrogen gas
- ☐ works like a battery
- ☐ Does not require recharging
- ☐ All of above



**What is typical number of blades in most modern HAWTs ?**

**Marks: 2**

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 6

**What happens if the wind speed exceeds the turbine's cut-out speed ?**

**Marks: 2**

- ☐ The turbine speeds up
- ☐ The turbine stops to prevent damage
- ☐ The turbine stores extra energy
- ☐ The turbine reverses its rotation

**What is the main function of the yaw mechanism in a HAWT ?**

**Marks: 2**

- ☐ To adjust the blade pitch
- ☐ To rotate the nacelle to face the wind
- ☐ To slow down the rotor speed
- ☐ To generate electricity directly

**Where are the most HAWTs installed ?**

**Marks: 2**

- ☐ Underground
- ☐ Offshore and Onshore
- ☐ Inside buildings
- ☐ In urban rooftops



**What is the main advantage of a HAWT over a VAWT (Vertical Axis Wind Turbine) ?**

**Marks: 2**

- ☐ Can operate in all wind direction without orientation
- ☐ More efficient at converting wind energy
- ☐ Require less land area
- ☐ Works better in low wind speed

**In horizontal axis Wind Turbine (HAWT) where generator is placed ?**

**Marks: 2**

- ☐ In the nessel
- ☐ Above the tower
- ☐ At ground level
- ☐ In the gearbox

**Which of the following solid waste disposal methods is ecologically most acceptable ?**

**Marks: 2**

- ☐ Sanitary land fill
- ☐ Inclineration
- ☐ Composting
- ☐ Pyrolysis

**In a HAWT, the rotor shaft is aligned in which direction ?**

**Marks: 2**

- ☐ Horizontal
- ☐ Vertical
- ☐ Diagonal
- ☐ Perpendicular to wind Flow



**What does HAWT stand for ?**

**Marks: 2**

- ☐ Horizontal Axis Wind Turbine
- ☐ Horizontal Axis Wind Tubeline
- ☐ Horizontal Airflow wind Turbine
- ☐ Hybrid Axis Wind Technology

**Which is the most common material used for morden HAWT blades ?**

**Marks: 2**

- ☐ Carbon Fibre
- ☐ Fibreglass - reinforced plastic
- ☐ Pure aluminium
- ☐ Titanium Alloy

**The biggest pollutant receptor or sink on the earth is**

**Marks: 2**

- ☐ Hyrdosphere
- ☐ Lithosphere
- ☐ Atmosphere
- ☐ Biosphere

**As per IS Code, the acceptable noise level in urban residential area is**

**Marks: 2**

- ☐ 35-45 dBA
- ☐ 45-55 dBA
- ☐ 30-40 dBA
- ☐ 40-50 dBA





**Which is the largest ecosystem on the earth ?**

**Marks: 2**

- ☐ Forests
- ☐ Sea
- ☐ Deserts
- ☐ Grasslands

**In biogas plant, digestion takes place in the absense of**

**Marks: 2**

- ☐ Oxygen
- ☐ Carbon dioxide
- ☐ Hydrogen
- ☐ Methane

**The daily cover of MSW landfills consists of which of the following**

**Marks: 2**

- ☐ Compacted Soil
- ☐ Geomembrane
- ☐ Geotextile
- ☐ Geocomposite

**In the atmosphere reaction between Nitrogen oxides, hydrocarbon and sunlight produces**

**Marks: 2**

- ☐ Sulphur Dioxide
- ☐ Benzene
- ☐ CO
- ☐ PAN



**Noise pollution is measured in**

**Marks: 2**

- ☐ Decibel
- ☐ Newton
- ☐ Dyne
- ☐ ECO

**Vegetables, grass, trees, etc are which type of biotic components ?**

**Marks: 2**

- ☐ Producers
- ☐ Consumers
- ☐ Decomposers
- ☐ Transformers

**Nacelle is used in**

**Marks: 2**

- ☐ Darious wind turbine
- ☐ Savonious wind turbine
- ☐ Horizontal axis wind turbine
- ☐ Water pumping wind mill

**Due to 'Ozone hole' in the earth's atmosphere, which ray comes to earth surface ?**

**Marks: 2**

- ☐ Laser rays
- ☐ X-rays
- ☐ Ultravoilet rays
- ☐ None of these



**Less of removal of the superficial layer of soil by the action of water, wind, or by the human activities are termed as**

**Marks: 2**

- ☐ Soil Erosion
- ☐ Soil Pollution
- ☐ Desertification
- ☐ Salination

**Minamata disease is caused by \_\_\_\_\_**

**Marks: 2**

- ☐ Mercury
- ☐ Lead
- ☐ Zinc
- ☐ Manganese

**Which of the following is an artificial ecosystem ?**

**Marks: 2**

- ☐ Forests
- ☐ Desert
- ☐ Fish house
- ☐ Pond



**Which pollutant is primarily responsible for causing respiratory problems and cardiovascular diseases in humans ?**

**Marks: 2**

- ☐ Lead
- ☐ Benzene
- ☐ Carbon Monoxide (CO)
- ☐ Particulate matter (PM10)

**What is the approximately range of modern solar photovoltaic (PV) panels in converting sunlight in to electricity ?**

**Marks: 2**

- ☐ 5-10%
- ☐ 15-20%
- ☐ 20-30%
- ☐ 40-50%

**CFCs are not recommended to be used in refrigerator because they \_\_\_\_\_**

**Marks: 2**

- ☐ Increase Temperature
- ☐ Deplete Ozone
- ☐ Affect Environment
- ☐ Affect Human Body



**Clouds are present \_\_\_\_ in layer of atmosphere.**

**Marks: 2**

- ☐ Stratosphere
- ☐ Troposphere
- ☐ Thermosphere
- ☐ Mesosphere

**Which pollutant is commonly associated with blue baby syndrome in infants ?**

**Marks: 2**

- ☐ Lead
- ☐ Arsenic
- ☐ Mercury
- ☐ Nitrate

**Which disease is known as 'pain-pain-diseases' due to severe bone pain and fractures ?**

**Marks: 2**

- ☐ Black Lung Disease
- ☐ Itai-Itai Disease
- ☐ Silicosis
- ☐ Fluorosis

**Which occupational disease is caused by inhaling coal dust over a long period ?**

**Marks: 2**

- ☐ Asbestosis
- ☐ Silicosis
- ☐ Black Lung Diseases
- ☐ Eutrophication



**What is the primary pollutant responsible for Fluorosis ?**

**Marks: 2**

- ☐ Fluoride
- ☐ Lead
- ☐ Sulfur dioxide
- ☐ Arsenic

**The Bhopal Gas Tragedy was caused due to which leakage of gas ?**

**Marks: 2**

- ☐ Carbon Monoxide
- ☐ Methyl isocyanate (MIC)
- ☐ Sulfur dioxide
- ☐ Nitrogen dioxide

**Which disease is associated with inhaling silica dust ?**

**Marks: 2**

- ☐ Silicosis
- ☐ Asbestosis
- ☐ Itai-Itai Disease
- ☐ Blue Baby Syndrome

**Acid Rain is mainly caused by which pollutants ?**

**Marks: 2**

- ☐ Carbon monoxide and Lead
- ☐ Nitrogen oxide and Sulphur dioxide
- ☐ Fluoride and Mercury
- ☐ Ozone and PM2.5



**What is the main source of Cadmium Contamination leading to Itai-Itai diseases**

**Marks: 2**

- ☐ Fertilizer runoff
- ☐ Industrial wastewater
- ☐ burning of fossil fuels
- ☐ Oil spills

