

Environmental and Sustainability

Subject Code: BE06

Date: 2025-03-15

Subject Name: Environmental and Sustainability

Time Duration: -

Total Marks: 108

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.
-

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 \blacksquare
- ☐ SO \blacksquare
- ☐ N \blacksquare
- ☐ CO

Which gas is mainly responsible for green house effect ?

Marks: 2

- ☐ CO \blacksquare
- ☒ CFC
- ☐ CH \blacksquare
- ☐ N \blacksquare 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
- ☐ Inclination
- ☒ 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

