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BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – B.Sc.(Ag)-Hons-2024

Course Name – Renewable Energy and Green Technology

Course Code - CC-BAG473(T)

(Semester IV)

Full Marks : 50

Time : 2:0 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 20=20

1. Choose the correct alternative from the following :

- (i) Energy resources which are being used for many decades are known as:
 - a) Conventional energy sources
 - b) Non-conventional energy sources
 - c) Primary energy sources
 - d) Fuel energy
- (ii) Which of these resources does not produce CO₂ during electricity generation?
 - a) Coal
 - b) Methane
 - c) Uranium
 - d) Biogas
- (iii) Choose the correct answer : on the basis of long-term availability ,resources are classified into:
 - a) Conventional and non- conventional resources
 - b) Renewable and non-renewable resources
 - c) Primary and secondary resources
 - d) Commercial and non commercial resources
- (iv) Find the correct answer: World energy needs are rising due to _____.
 - a) Deforestation
 - b) Increasing population and industrialization
 - c) Inflation
 - d) Natural calamities
- (v) What is major problem with wind energy?
 - a) Generates energy from wind
 - b) It is renewable source of energy
 - c) Requires large area of land
 - d) Compact and does not require large area land
- (vi) What is the PH level of acid rain?
 - a) Between 3-4
 - b) Between 6-8
 - c) 7
 - d) Between 11-14
- (vii) Which of the following is the cleanest fossil fuel?
 - a) Natural gs
 - b) Petrol
 - c) Petroleum
 - d) Coal

(viii) What is solar collector?

- | | |
|--|--|
| a) A system to collect heat by absorbing sunlight | b) A system to collect rainwater by absorbing sunlight |
| c) A system to collect electricity by absorbing sunlight | d) A device to reflect sunlight back |

(ix) Select the correct answer: Direct solar water heating systems ____

- | | |
|---------------------------------------|----------------------------------|
| a) offer great overheating protection | b) are called pumped systems |
| c) offer no overheating protection | d) offer great freeze protection |

(x) Which of the following is a product of pyrolysis of biomass?

- | | |
|-------------------------|-----------|
| a) Producer gas | b) Steel |
| c) Agricultural residue | d) Sodium |

(xi) What are two main products of anaerobic digestion?

- | | |
|------------------------------|----------------|
| a) biogas and bio-fertilizer | b) waste water |
| c) producer gas | d) syngas |

(xii) Choose the correct answer: wind turbine converts wind energy to:

- | | |
|----------------------|----------------------|
| a) mechanical energy | b) electrical energy |
| c) heat energy | d) solar energy |

(xiii) Which one of the following is the major contributor to world population?

- | | |
|-----------------------------|-----------------------------|
| a) commercial resources | b) non-commercial resources |
| c) renewable energy sources | d) nuclear energy |

(xiv) Which of the following is not a type of primary resource?

- | | |
|--------------------|-------------|
| a) crude oil | b) coal |
| c) hydrogen energy | d) sunlight |

(xv) Which of the following are types of pyrolysis?

- | | |
|---|---|
| a) flash and ablative | b) intermediate and anaerobic digestion |
| c) Anaerobic digestion and fermentation | d) fermentation and intermediate |

(xvi) Select the correct answer: pyrolysis occurs in the presence of ____ oxygen.

- | | |
|------------------------------|------------------|
| a) large amount of | b) absence of |
| c) extremely large amount of | d) low amount of |

(xvii) Choose the correct answer: Higher wind speeds _____ the speed of rotation of the wind blades.

- | | |
|---------------------------|---------------------------------|
| a) increase | b) decrease |
| c) monotonically decrease | d) first increase then decrease |

(xviii) Select the correct answer: lower wind speeds result in ____.

- | | |
|--------------------------------|----------------------------|
| a) Higher wind energy obtained | b) no wind energy obtained |
| c) lower wind energy obtained | d) None of these |

(xix) Identify: Green House gases are ____

- | | |
|--|---|
| a) Absorbers of long-wave radiations from earth | b) Transparent to both solar radiations and long-wave radiations from earth |
| c) Absorbers of solar radiations for warming the atmosphere of earth | d) Transparent to emissions from earth for passage into outer space |

(xx) Select the correct answer: Ozone layer occurs in ____.

- | | |
|-----------------|-----------------|
| a) Ionosphere | b) Stratosphere |
| c) Thermosphere | d) Troposphere |

Group-B

(Short Answer Type Questions)

2.5 x
10=25

2. Define energy and mention its sources.

(2.5)

3. What is the working principle of a wind turbine? (2.5)
4. Identify the various forms of energy. (2.5)
5. Construct a brief note on solar energy. (2.5)
6. Construct briefly about renewable energy. (2.5)
7. Construct briefly about non- renewable energy. (2.5)
8. Briefly explain the advantages of biogas plants. (2.5)
9. Briefly explain about the solar dryer. (2.5)
10. Briefly explain about the Solar Cooker. (2.5)
11. Discuss the fixed bed gasifier? (2.5)

OR

Develop a short note on Solar Pond. (2.5)

Group-C

(Long Answer Type Questions)

5 x 1=5

12. Explain the application of solar energy. (5)

OR

Briefly explain the flat plat collector. (5)

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