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BRAINWARE UNIVERSITY

Term End Examination 2023

Programme – B.Sc.(Ag)-Hons-2021

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) Choose the correct answer : 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 gas | b) petrol |
| c) petroleum | d) coal |

- (viii) 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
- (ix) Choose the correct answer: wind turbine convert wind energy to
- a) mechanical energy b) electrical energy
 c) heat energy d) solar energy
- (x) Which of the following are used to produce ethanol when water is not available in plenty?
- a) sugarcane b) wheat
 c) corn d) sorghum
- (xi) Which of the following is best suited for hydrothermal processing?
- a) forestry byproducts b) wheat
 c) corn d) sewage sludge
- (xii) Why is feathering of wind turbine blades required?
- a) to increase drag b) to reduce drag
 c) to prevent the blades from being destroyed by strong winds d) to extract power from strong winds originating from storm
- (xiii) Select the correct answer: lower wind speeds results in _____
- a) higher wind energy obtained b) no wind energy obtained
 c) lower wind energy obtained d) none of these
- (xiv) Choose the correct answer: _____ speed WECS is the most flexible in terms of the generators used .
- a) full variable b) limited variable
 c) half variable d) fixed
- (xv) 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
- (xvi) Infer a correct following purpose : Direct solar energy is used for what purpose?
- a) Water heating b) Distillation
 c) Drying d) All of these
- (xvii) Infer the one correct option : The efficiency of various type of collector _____ with _____ temperature
- a) increases, decreasing b) decreases, increasing
 c) remains same, increasing d) Depend upon types of collector
- (xviii) Identify the crude oil
- a) colourless b) odourless
 c) smelly allow to black liquid d) None of these
- (xix) Which of the following is the most dangerous type of radiation?
- a) Alpha radiation b) Beta radiation
 c) Gamma radiation d) None of these
- (xx) Infer the correct answer : The less insolation occurs when the sun is _____
- a) At night b) Low in the sky
 c) High in the sky d) None of these

Group-B

(Short Answer Type Questions)

2.5 x 10=25

2. Build the definition of energy and mention its sources. (2.5)
 3. Organise the various forms of energy. (2.5)
 4. Identify the different source of farm power. (2.5)

5. consturct briefly advantages of biogas plants. (2.5)
6. Develop the concept of producer gas and mention its content. (2.5)
7. Briefly construct a concept of biodiesel. (2.5)
8. Discuss about the vertical axic type wind mill. (2.5)
9. Discuss the disadvantages of renewable energy. (2.5)
10. Discuss about the KVIC type biogas plant. (2.5)
11. Organise the advantages of renewable energy. (2.5)

OR

Build a comparision between advantages and disadvantages of fossil fuels. (2.5)

Group-C

(Long Answer Type Questions)

5 x 1=5

12. Discuss about the maintenace of biogas plant. (5)

OR

Discuss about the fixed bed gasifiers. (5)
