

D 70951

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Name..... 63

Reg. No.....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2014

(UG—CCSS)

Open Course—Physics/Applied Physics

PH 5D 01 (1) }
AP 5D 01 (1) } NON-CONVENTIONAL ENERGY SOURCES

Time : Three Hours

Maximum : 30 Weightage

Part I (Objective Type Questions)

Answer all questions.

Each question carries a weightage of ¼.

1. Which of the following is an example of secondary energy source :
(a) Petrol. (b) Coal.
(c) Nuclear fuel. (d) Wind.
2. Ozone of the atmosphere absorbs mainly :
(a) UV band of the sunlight. (b) Cosmic rays.
(c) Infrared band of the sunlight. (d) Blue colour of sunlight.
3. A pyranometer is used to measure :
(a) Total solar radiation.
(b) Infrared radiation from the sun.
(c) Heat energy from solar radiation.
(d) Intensity of solar radiation as a function of incident angle.
4. In a solar pond, solar energy is stored as :
(a) Thermal energy. (b) Electrical energy.
(c) Chemical energy. (d) Mechanical energy.
5. The advantage of air foils is :
(a) Light weight. (b) Lift drag ratio is high.
(c) Lift drag ratio is low. (d) Zero drag force.
6. Which of the following is an example of renewable energy source :
(a) Coal. (b) Petrol.
(c) Geothermal steam. (d) Agricultural farm waste.

Turn over

7. Water vapour of the atmosphere absorbs the _____ band of sunlight.
8. The duration of bright sun shine in a day is measured by means of an instrument _____.
9. The primary source behind wind energy is _____ energy.
10. Hot molten rock present at depth greater than 25 km. on earth is called _____.
11. Green plants convert solar energy into biomass by the process called _____.
12. _____ battery is an example of alkali metal batteries.

(12 × ¼ = 3 weig

Part II (Short Answer Type Questions)

Answer all questions.

Each question carries a weightage of 1.

13. Explain how green house effect is achieved in a glass chamber.
14. What is meant by photovoltaic effect ?
15. What do you mean by sensible heat storage ?
16. What is meant by "isovents" ?
17. Give any *two* methods for storing energy from wind energy converter systems.
18. What do you mean by a biofuel ? Give examples.
19. What are the basic kinds of Geothermal sources ?
20. What are the main components of a tidal power plant ?
21. Explain any *two* advantages of hydrogen as a "clean fuel".

(9 × 1 = 9 weig

Part III (Short Essay Type Questions)

Answer any **five** questions.

Each question carries a weightage of 2.

22. With the help of a diagram, explain the principle of a natural circulation solar water heat
23. With the help of a diagram, explain the principle of solar furnace.
24. With the help of a block diagram, explain the basic components and operation of a wind conversion system.
25. Explain any *two* techniques used to derive useful energy from biomass.
26. List the advantages and disadvantages of geothermal energy over other forms of energy.
27. Describe a method for converting wave energy to mechanical energy.
28. What are the advantages of fuel cells ? Explain the principle of hydrogen fuel cells.

(5 × 2 = 10 weig

Part IV (Essay Questions)

Answer any two questions.

Each question carries a weightage of 4.

29. (a) Explain the different aspects of solar radiation reaching the surface of the earth.
(b) What are the basic instruments used for the measurement of solar radiation.
30. Write short notes on the following :
- (a) Solar distillation.
(b) Solar ponds.
31. Explain the classification of batteries. Describe the reaction taking place in lead-acid battery.
What are the advantages of batteries for bulk energy storage ?

(2 × 4 = 8 weightage)