

D 50610

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Name.....

Reg. No.....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2018

(CUCBCSS—UG)

Open Course

PHY 5D 01 (1)—NON-CONVENTIONAL ENERGY SOURCES

Time : Two Hours

Maximum : 40 Marks

Section A (One Word Answers)

Answer all questions.

1. Give the name of an instrument used in solar radiation measurements.
2. What is the fundamental effect used in the conversion of solar radiation to heat ?
3. Write any advantage of wind energy.
4. What do you mean by biomass ?
5. What is the working fluid in an open cycle ocean thermal electric power generation ?
6. Give example of a primary battery.

(6 × 1 = 6 marks)

Section B (Short Answers)

Answer all questions.

In one or two sentences each.

7. Define the term solar constant.
8. What do you mean by a solar furnace ?
9. Write any three applications of wind energy.
10. List the essential components of a tidal power plant.
11. What do you mean by the open circuit voltage of a battery ?

(5 × 2 = 10 marks)

Section C (Paragraph Answers)

Answer any four questions.

12. Using a suitable schematic, explain the working principle of a solar still.
13. What is photovoltaic effect ? What are the basic processes involved in a solar cell ?

Turn over

14. Discuss the advantages of a vertical axis wind turbine over a horizontal axis one.
15. Discuss the anaerobic digestion technique used for obtaining energy from biomass.
16. Explain the basic principle of production of tidal power.
17. Illustrate the working principle of a float wave-power conversion device.

(4 × 4 = 16 marks)

Section D (Essays)

Answer any one question.

18. What is a solar cooker ? What are different designs of solar cookers ? Using a suitable figure, discuss the working principle of a box type solar cooker.
19. What are the basic mechanisms behind the production of local winds ? Discuss the basic components of a wind energy conversion system.
20. Briefly explain the different categories of the geothermal sources of energy. List any four advantages and disadvantages of geothermal energy over other forms of energy.

(1 × 8 = 8 marks)