D 70337 (Pages : 2) Name.....

Reg. No.....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

(CUCBCSS–UG)

Physics/Applied Physics

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

Time : Two Hours Maximum : 40 Marks

Section A (One word answer)

Answer **all** *questions.*
Each question carries 1 *mark.*

1. The radiation coming from the sun appears to be equivalent to that coming from a black body of temperature ————.
2. A solar cell converts solar energy to ————.
3. In biomass, solar energy is stored in the form of ————.
4. Are secondary batteries rechargeable ?
5. Write any one disadvantage of geothermal energy.
6. Give a factor that determines the output of a wind energy converter.

(6 × 1 = 6 marks)

Section B (Short Answer)

Answer **all** *questions in one* **or** *two sentenees.*
Each question carries 2 *marks.*

7. What is the working principle of Pyrheliometer ?
8. Give two advantages of a solar furnace.
9. Mention any two applications of wind energy.
10. Write any two sources of geothermal energy.
11. What are the essential parts of a tidal power plant ?

(5 × 2 = 10 marks)

Section C (Paragraph Answer)

Answer any **four** *questions.*
Each question carries 4 *marks.*

12. Discuss the principle of conversion of solar radiation to heat.
13. Using a suitable figure, explain the working principle of a solar distillation unit.
14. Discuss the basic mechanisms behind the generation of local winds. What do you mean by the power coefficient of a wind energy conversion system ?

Turn over

15. Explain the different methods of obtaining energy from biomass.
16. Discuss a method for converting wave energy to mechanical energy.
17. Discuss the working principle of a battery.

(4 × 4 = 16 marks)

Section D (Essay)

Answer any **one** *question.*
The question carries 8 marks.

18. What do you mean by a solar green house ? What are its advantages ? Discuss the working principle of any two types of solar green houses.
19. Explain the principle of wind energy conversion. With the help of a block diagram, discuss the basic components of a wind energy conversion system.
20. Explain the principle of ocean thermal energy conversion. Discuss the open cycle OTEC system.

(1 × 8 = 8 marks)