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Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MARCH 2019

Sixth Semester

Choice Based Course—RENEWABLE ENERGY TECHNOLOGY

(Common for Model I B.Sc. Physics and Model II B.Sc. Physics)

(2013 Admission onwards)

Time : Three Hours

Maximum Marks : 80

Part A

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

1. State the salient features of renewable energy sources.
2. What are the advantages of photovoltaic system ?
3. Define fill factor of solar cell.
4. State principle of wind turbine.
5. What are the advantages of wind energy ?
6. What is geothermal energy ?
7. What is biomass ?
8. What is meant by OTEC ?
9. What is hydrogen energy ?
10. What is fuel cell ?

(10 × 1 = 10)

Part B

*Answer any eight questions.
Each question carries 2 marks.*

11. What are the non- renewable sources of energy ? Explain.
12. Discuss the structure of concentrating collector.
13. List the options adopted for enhancing the efficiency of solar collectors.
14. Explain solar pond.
15. What are the most favourable sites for installing of wind turbines ?
16. Give the details of biomass classification.

Turn over

17. What are hot dry rock resources ?
18. What are the characteristics of bio-gas ?
19. Explain energy conversion involved in a tidal power plant.
20. Explain hydrogen fuel cell.
21. What is a closed cycle OTEC system ?
22. List the limitations of wave energy.

(8 × 2 = 16)

Part C

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

23. Explain solar heating for buildings.
24. Describe the principle of solar photo voltaic energy conversion.
25. Write the advantages and disadvantages of concentrating collectors and flat plate collectors.
26. What are the principles of bioconversion? Write a short note on aerobic digestion.
27. Write a note on geothermal exploration.
28. Explain the methods of obtaining energy from Biomass.
29. Explain the construction and working of any type of fuel cell.
30. Describe the double cycle system for tidal energy.
31. Write a note on the prospects of OTEC in India.

(6 × 4 = 24)

Part D

*Answer any two questions.
Each question carries 15 marks.*

32. Enumerate the environmental issues associated with utilization of following renewable energy sources (a) Geothermal energy ; and (b) Open cycle OTEC system.
33. What is the principle of wave energy plant? Explain the wave energy conversion machines.
34. Explain the most popular biogas generation technology and its utilisation in India.
35. With the help of schematic diagram explain technique of solar heating and cooling.

(2 × 15 = 30)