

**2021/TDC(CBCS)/EVEN/SEM/
PHSSEC-601T/100**

**TDC (CBCS) Even Semester Exam.,
September—2021**

PHYSICS

(6th Semester)

Course No. : PHSSEC-601T

(Renewable Energy and Energy Harvesting)

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

SECTION—A

Answer any *fifteen* of the following questions :
1×15=15

1. Is nuclear energy better than fossil fuels?
2. How is geothermal energy generated?
3. What is hydroelectricity?
4. Which country has the largest offshore wind farm?

5. What is tidal energy?
6. State two uses of solar energy.
7. Define a photovoltaic system.
8. What is absorption air-conditioning?
9. State the principle of solar cell.
10. What is solar distillation system?
11. How many layers are existing in solar pond?
12. Who invented the solar tracking system?
13. What is osmotic power generation?
14. How much biomass is there in the ocean?
15. What is meant by ocean thermal energy?
16. What are wave energy devices?
17. Does wind turbine produce AC or Dc?
18. Where is ocean thermal energy used?
19. State the technology that is used for hydroelectric power.

20. What are the resources of geothermal energy?
21. How much power does a human have?
22. State the effects of hydropower on the environment.
23. What do you mean by hydroenergy?
24. How much energy does piezoelectricity produce?
25. What is energy harvesting system?
26. How does a linear generator work?
27. What technologies exist that can capture carbon?
28. What is the alternative to battery power?
29. Is renewable energy the solution to global warming?
30. Why is renewable energy good for climate change?

SECTION—B

Answer any *five* of the following questions :

2×5=10

31. How much more efficient is nuclear energy than fossil fuels?
32. Why is ocean thermal energy conversion renewable?
33. State the advantages of solar energy.
34. How does a solar cooker work?
35. What are the three main types of wind energy?
36. How energy is generated from ocean biomass?
37. Why is electromagnetic energy harvesting important?
38. Why do the renewable energy sources cause less pollution in environment?
39. How is hydropower being used today?
40. Why geothermal energy is bad?

(5)

SECTION—C

Answer any *five* of the following questions :

5×5=25

41. What are non-conventional source of energy? State the advantages and disadvantages of non-renewable energy source.
42. What are the different conversion technologies for biomass? Explain briefly.
43. What is a solar pond? State the working principle of solar pond. Explain the applications of solar pond.
44. Stating the definition of solar greenhouse, explain how solar greenhouse differs from conventional greenhouse.
45. What are the different electrical machines in wind turbines? How do wind turbines generate electricity? Explain in brief.
46. What is tidal energy? How is tidal energy converted to electricity? Explain.
47. Define piezoelectricity. How piezoelectricity works? What is piezoelectricity used for?

- 48.** What is geothermal energy and how does it work? How is geothermal energy generated? Explain briefly.
- 49.** State the environmental issues of renewable sources of energy. What are the problems with renewable energy?
- 50.** How does carbon capture technology works? What are the pros and cons of carbon capture?

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