2022/TDC (CBCS)/EVEN/SEM/
PHSSEC-601T/122

TDC (CBCS) Even Semester Exam., 2022

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. How much better is nuclear energy than fossil fuels?

2. What is meant by offshore wind energy?

3. State the two primary processes under biochemical conversion.

4. Which country uses tidal energy most?

5. Which material is used in solar heat energy storage?

6. What is non-convecting solar pond?

7. How is heat absorbed in AC?

8. State the function of photovoltaic.

9. What type of energy is wind energy?

10. How many types of wind turbine system are there?

11. What do you mean by grid in networking?

12. Will solar energy replace fossil fuels?

13. Is hydroenergy good for the environment?

14. What pollution does hydropower produce?

15. Are there any other technologies that are available now that could be used instead of dams?

16. What is piezoelectric material?

17. What is electromagnetic energy harvesting?

18. State the importance of carbon capture technology.

19. Why is a battery called a cell?

20. Do renewable energy sources cause pollution?

SECTION—B

Answer any *five* of the following questions : 2×5=10

21. State the difference between onshore and offshore wind energy.

22. How is biogas energy generated?

23. How is solar greenhouse construct?

24. Why is solar energy important to life on the earth?

25. How are ocean waves converted to electricity?

26. What is power electronics and its application?

27. Why is geothermal energy not widely used?

28. How does piezoelectric energy harvesting work?

29. How do you convert linear motion into electricity?

30. What is sustainability? Give its example.

SECTION—C

Answer any *five* of the following questions : 5×5=25

31. What is tidal energy and how does it work? What are the advantages of tidal energy? 1+2+2=5

32. What is ocean thermal energy? How does ocean thermal energy affect the environment? 1+4=5

33. What is solar cell? How does it work? State the advantages of solar cell. 1+2+2=5

34. What is sun tracking solar system? State the different methods of sun tracking. How does a sun tracking system work? 1+2+2=5

35. What are the potential challenges in implementation of solar energy? State the future potential for solar power. 5

(Continued)

36. How does ocean thermal energy work? State the advantages of ocean thermal energy. 2+3=5

37. What are the environmental impacts of hydropower? Does hydroelectricity produce greenhouse gases? 4+1=5

38. What are the positive and negative effects of hydropower on the environment? How can hydropower be more environmentally friendly? 3+2=5

39. What is power consumption of electricity? State the unit of power consumption. How do you calculate power consumption? 2+1+2=5

40. How can renewable energy affect the environment? What are the two biggest energy issues currently faced by human? 3+2=5

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