

(6 pages)

Reg. No. :

Code No. : 10472 E Sub. Code : CEPH 61

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Sixth Semester

Physics

Major Elective – ENERGY PHYSICS

(For those who joined in July 2021–2022)

Time : Three hours

Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. World Energy Needs are rising due to

- (a) deforestation
- (b) increasing population and Industrialization
- (c) inflation
- (d) natural calamities

2. To focus on Renewable and Other alternative sources of energy _____ was established in March 1981 by the Government of India.

- (a) commission for additional sources of energy
- (b) commission for alternative sources of energy
- (c) council of scientific & industrial research
- (d) centre for science and environment

3. Which of the following metals are used to make pipes of low cost solar water heating system?

- (a) Gold (b) Copper
- (c) Polymer (d) Silver

4. What is solar cooker?

- (a) Uses direct sunlight to produce heat and cook food
- (b) Uses solar energy to evaporate water and collect it within the same closed system
- (c) Uses solar energy to dry substances
- (d) Uses concentrated solar power to for industry

5. _____ is one of the most important materials is also known as solar grade silicon.

- (a) Crushed silicon (b) Crystalline silicon
- (c) Powdered silicon (d) Silicon

Page 2 **Code No. : 10472 E**



6. What is the difference between Photodiode and Solar cell?

- (a) No External Bias in Photodiode
- (b) No External Bias in Solar cell
- (c) Larger surface area in photodiode
- (d) No difference

7. Which of the following is used to produce biogas from biomass?

- (a) Anaerobic treatment
- (b) Aerobic treatment
- (c) Fermentation
- (d) Pyrolysis

8. Which of the following technologies are used to convert biomass into useful energy forms?

- (a) Bio-chemical process
- (b) Galvanization
- (c) Doping
- (d) Photoelectric effect

Page 3 Code No. : 10472 E

9. Which of the following is a reason for storing wind energy?

- (a) Wind power generation is not correlated to the demand cycle
- (b) Wind power generation is correlated to the demand cycle
- (c) Wind is a renewable resource
- (d) Wind power is guaranteed to be available during peak demands

10. What is tidal power?

- (a) Energy from tides
- (b) Energy from water
- (c) Energy from moon
- (d) Energy from sun

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Briefly Discuss Renewable and non-renewable energy sources.

Or

(b) Explain Non-commercial energy sources.

Page 4 Code No. : 10472 E

[P.T.O.]



12. (a) Define solar radiation. Explain the nature of solar radiation and its Components.

Or

- (b) Describe solar pond with neat sketch.

13. (a) Appraise basic silicon solar cell.

Or

- (b) Explain the Advantages and Disadvantages of Photovoltaic power generation system.

14. (a) Briefly Explain Biogas generation.

Or

- (b) Discuss the advantages and disadvantages of biological conversion of solar energy.

15. (a) Summarize a note on wind energy collector.

Or

- (b) State the advantages and limitations of tidal power generation.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe Conventional and Non-conventional energy sources

Or

- (b) List out the merits, demerits and applications of nature gas.

Page 5 Code No. : 10472 E

17. (a) Demonstrate the Construction and working of solar water heater

Or

- (b) Illustrate the merits and demerits of solar energy.

18. (a) Elucidate the Photo voltaic system for power generation sketch.

Or

- (b) Explain hybrid system.

19. (a) Classify biomass energy and explain.

Or

- (b) Extend the working principle of down draft gasifier.

20. (a) Describe various types of wind machines.

Or

- (b) Justify the Principle of Hydrogen as alternative fuel for motor vehicles.

Page 6 Code No. : 10472 E

