

(6 Pages)

**Reg. No. :** .....

**Code No. : 30330 E    Sub. Code : JMPH 6 B/  
SEPH 6 B**

B.Sc. (CBCS) DEGREE EXAMINATION,  
APRIL 2020.

Sixth Semester

Physics — Core

Major Elective – III — ENERGY PHYSICS

(For those who joined in July 2016 onwards)

Time : Three hours

Maximum : 75 marks

PART A — ( $10 \times 1 = 10$  marks)

Answer ALL questions.

Choose the correct answer:

1. Which of the following is a not-renewable resource?
  - (a) Coal
  - (b) Forests
  - (c) Water
  - (d) Wild life
2. Photovoltaic energy is the conversion of sunlight into
  - (a) Chemical energy
  - (b) Biogas
  - (c) Electrictiy
  - (d) Geothermal energy

3. A fuel cell in order to produce electricity burns
- (a) Helium
  - (b) Nitrogen
  - (c) Hydrogen
  - (d) None of the above
4. The outermost layer of the earth is
- (a) Magma
  - (b) Mantle
  - (c) Crust
  - (d) None of the above
5. Common energy source in Indian villages is
- (a) Electricity
  - (b) Coal
  - (c) Sun
  - (d) Wood and animal dung
6. Horizontal axis and vertical axes are the types of
- (a) Nuclear reactor
  - (b) Wind mills
  - (c) Biogas reactor
  - (d) Solar cell

7. Boiling water reactor and pressurized water reactors are
- (a) Nuclear reactor      (b) Solar reactor
  - (c) Thermal reactor      (d) Biogas reactor
8. Lignite, bituminous and anthracite are different ranks of
- (a) Nuclear fuel      (b) Coal
  - (c) Natural gas      (d) Biogas
9. The value of solar constant is
- (a)  $1347 \text{ W/m}^2$       (b)  $1357 \text{ W/m}^2$
  - (c)  $1367 \text{ W/m}^2$       (d)  $1377 \text{ W/m}^2$
10. The following type of energy is stored as latent heat
- (a) Thermal energy
  - (b) Chemical energy
  - (c) Electrical energy
  - (d) Mechanical energy

PART B — ( $5 \times 5 = 25$  marks)

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

Each answer should not exceed 250 words.

11. (a) What are renewable and non-renewable energy resources?

Or

- (b) Explain in details about the conventional energy resource.

12. (a) Write few example of the applications of solar energy.

Or

- (b) Write a short notes on solar water heater.

13. (a) What are the types of solar cell?

Or

- (b) Explain the photovoltaic technology in brief.

14. (a) Write briefly about the various biomass resources available in earth.

Or

- (b) Explain the construction and working of biogas.

15. (a) What is the basic principle of wind energy conversion and mention the any three application?

Or

- (b) What are the advantages and limitation of tidal power generation?

PART C — ( $5 \times 8 = 40$  marks)

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

Each answer should not exceed 600 words.

16. (a) Discuss about the energy conservation and efficiency in detail.

Or

- (b) Explain in details about the conventional and non-conventional energy resources.

17. (a) Explain the different types of solar collectors.

Or

- (b) Explain the construction and working of solar cooker.

18. (a) What are the advantage and disadvantages of PV solar energy conversion?

Or

- (b) What are the application of solar photovoltaic systems?

19. (a) What is agasifier? Explain its classification and functioning in detail.

Or

- (b) Write briefly about the various biomass resources available in earth.

20. (a) Explain the fuel cells and application of fuel cells.

Or

- (b) Define wave energy explain the energy and power from waves.
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