

U.G. 3rd Semester Examination - 2021**PHYSICS****[PROGRAM]****Course Code : BPHSSERT304****Course Title : Renewable Energy and Energy Harvesting**

Full Marks : 50

Time : 2 Hours

The figures in the right-hand margin indicate marks.

Answer all the questions by choosing correct alternative:

$$2 \times 25 = 50$$

1. Which of the following statements is true about conventional energy sources?
 - a) They cause minimum pollution
 - b) They are available in limited quantity
 - c) Coal is the most used conventional energy source in the world
 - d) There are sufficient reserves of Coal, Petroleum and Natural gas for the next 500 years.
2. Which of the following is a disadvantage of Hydro Power?
 - a) They cause deforestation and affect wildlife

- b) They cause harmful emissions
 - c) They are an unstable source of energy
 - d) They are not suitable for long-distance electricity transmission.
3. What is the major problem with wind energy?
 - a) Generates energy from wind
 - b) It is a renewable source of energy
 - c) Requires large area of land
 - d) Compact and does not require large area of land
4. The power from the sun intercepted by the earth is approximately
 - a) 1.8×10^8 MW
 - b) 1.8×10^{11} MW
 - c) 18×10^{14} MW
 - d) 1.8×10^{17} MW
5. Which of the following is true for biomass and bio-fuels?
 - a) their contribution towards reduction in CO₂ emissions is limited
 - b) both emit large amount of air pollution when burned
 - c) they consume large amount of water
 - d) All of the above

6. Which of the following is a disadvantage of most of the renewable energy sources?
- a) Highly polluting
 - b) High waste disposal cost
 - c) Unreliable supply
 - d) High running cost
7. Bio-diesel is produced from oils or fats using
- a) fermentation
 - b) transesterification
 - c) distillation
 - d) None of the above
8. Hydraulic turbine converts hydro energy into mechanical by using ___ of water.
- a) Kinetic energy
 - b) Potential energy
 - c) both (a) and (b)
 - d) None of the above
9. Piezoelectric effect is
- a) Isotropic
 - b) Anisotropic
 - c) Large in Magnitude
 - d) Dominating

10. The Piezoelectric materials used for converting energy are called as
- a) Transition Devices
 - b) Converter
 - c) Dielectric
 - d) Transducer
11. The by-product of the ocean thermal energy conversion is
- a) Hot water
 - b) Cold water
 - c) Chemicals
 - d) Gases
12. Series and parallel combination of the solar cells is known as
- a) Solar array
 - b) Solar light
 - c) Solar sight
 - d) Solar eye
13. Material used for making solar cell is
- a) Silicon
 - b) Carbon
 - c) Sodium
 - d) Magnesium

14. Which of the following gas has no Green House Effect?
- CH₄
 - N₂O
 - H₂
 - CO₂
15. In Ajodhya Hill, Purulia, West Bengal, there is a
- Nuclear power plant
 - Hydroelectric power plant
 - Wind power plant
 - Thermal power plant
16. Kinetic energy that results from the oscillation of water is called
- Tidal energy
 - Wave energy
 - Hydro energy
 - Ocean energy
17. Which renewable resource generates maximum power in India?
- Piezoelectric
 - Wind
 - Solar
 - biomass

18. Solar cell works on
- Photoelectric effect
 - piezoelectric effect
 - Raman effect
 - photovoltaic effect
19. Absorption of solar radiation earth's atmosphere occurs due to presence of
- O₃
 - H₂O-vapour
 - CO₂
 - All of the above
20. The time gap between high tide and low tide at any given place is
- 6 hours
 - a little less than 6 hours
 - a little over 6 hours
 - 12 hours 26 minutes
21. The full form of OTEC is
- Ocean thermal energy conversion
 - Ocean tidal energy conversion
 - Ocean thermal energy commission
 - Ocean tidal energy commission

22. The value of solar constant at the earth's surface is
- a) 780 w/m²
 - b) 1367 w/m²
 - c) 2367 w/m²
 - d) 2380 w/m²
23. The main components of nuclear reactor's fuel are
- a) Uranium and iodine
 - b) Uranium and plutonium
 - c) Uranium and barium
 - d) None of the above
24. The source of energy in sun is
- a) Nuclear transformation
 - b) Nuclear fission
 - c) Nuclear fusion
 - d) Nuclear chain reaction
25. Which country has long history of using wind energy?
- a) China
 - b) India
 - c) America
 - d) UK
