

**1. How is OTEC caused?**

- a) By wind energy
- b) By geothermal energy
- c) By solar energy**
- d) By gravitational force

2. What does OTEC stand for?

- a) Ocean thermal energy cultivation
- b) Ocean thermal energy conversion**
- c) Ocean techno energy conservation
- d) Ocean thermal energy consumption

3. How is water trapped from coastal waters?

- a) By building canals
- b) By building dams**
- c) By digging wells
- d) By storing in tanks

4. Water to the turbine is allowed through the _____

- a) Pipes
- b) Sluice gates**
- c) Canals
- d) Pumps

5. For exactly how much time does it take for one tidal cycle?

- a) 22h, 20min
- b) 24h, 50min**
- c) 20h, 10min
- d) 22h, 50min

6. What type of tide is it if the difference between high and low tide is greatest?

- a) Diurnal tide
- b) Neap tide

c) Spring tide

d) Ebb tide

7. A tide whose difference between high and low tides is least is called as _____

a) Diurnal tide

b) Neap tide

c) Spring tide

d) Ebb tide

8. Which of the turbine can be mounted vertically and horizontally?

a) Pelton wheel

b) Kaplan turbine

c) Gorlov turbine

d) Francis turbine

9. Tidal energy is a form of _____

a) Wind power

b) Solar power

c) Heat energy

d) Hydro power

10. Tidal energy has _____ for future electricity generation.

a) Kinetic energy

b) Potential

c) Wind power

d) Solar power

11. Which of the following is the best form of energy that can be used at any time?

a) Wind energy

b) Solar energy

c) Tidal energy

d) Heat energy

12. The oceanic tides are due to _____

a) Heavy Winds

b) Slight earth quakes

c) Water force

d) Gravitational interaction

13. Tidal power is practically _____

a) Exhaustible

b) Inexhaustible

- c) Not possible
- d) Complicated

14. Movement of tides causes the loss of _____ in earth moon system.

- a) Static energy
- b) Frictional energy
- c) Mechanical energy**
- d) Kinetic energy

15. The loss of mechanical energy due to movement of tides in earth moon system causes the rotation of earth _____

- a) Slow**
- b) Fast
- c) Very fast
- d) Remains same

16. How many basins does a single pool tidal system have?

- a) 1**
- b) 2
- c) 3
- d) 4

17. How much energy is estimated as total tidal power that is generated throughout the world?

- a) 2.4×10^6 MW**
- b) 8.3×10^6 MW
- c) 4.9×10^6 MW
- d) 12×10^6 MW

18. What is time period for one tide to occur in a day?

- a) 6h, 12.5 min**
- b) 6h, 40.5 min
- c) 6h, 0 min
- d) 6h, 25.6 min

19. What happens if the turbine generators are smaller and operate much longer?

- a) Resulting work is reduced**
- b) High power generation
- c) Less power loss
- d) Less sound is created

20. On what is two-pool tidal system is less dependent?

- a) Barrage

b) Tidal fluctuation

- c) Reservoir
- d) Gravitational force

21. How much must be the tidal range over barrage to be feasible?

- a) 7 meters**
- b) 25 meters
- c) 10 meters
- d) 20 meters

22. Difference between water height at high tide and water height at low tide is called

- _____
- a) Tidal Variation
 - b) Tidal volume
 - c) Tidal Range**
 - d) Tidal Current

23. What is the movement of water generated by or associated with the change in mean sea level called?

- a) Tidal Variation
- b) Tidal volume
- c) Tidal Range
- d) Tidal Current**

24. Which is the type of energy where the energy is harnessed by the heat accumulated on the surface of water?

- a) Wind energy
- b) Wave energy
- c) Ocean thermal energy conversion**
- d) Solar energy

25. Water _____ decreases with an increase in temperature.

- a) volume
- b) density**
- c) pressure
- d) force

26. How many essentially infinite heat reservoirs are present in tropical waters?

- a) 1
- b) 2**
- c) 3
- d) 4

27. Who first recognized the OTEC?

- a) d'Arsonval**
- b) Alexander Edmond Becquerel
- c) James Prescott joule
- d) LA Rance

28. From which cycle does maximum possible efficiency of a heat engine operating between two temperature limits cannot exceed?

- a) Carnot cycle**
- b) Otto cycle
- c) Open cycle
- d) Anderson cycle

29. Which of the following has the lowest efficiency?

- a) Solar energy
- b) Wind energy
- c) Wave energy
- d) OTEC**

30. The working fluid chosen by Anderson OTEC cycle is _____

- a) Propane**
- b) Water
- c) Engine oil
- d) ISO-butane

31. A continuous movement of water in specific direction is called as _____

- a) float
- b) waves
- c) current
- d) tides**

32. Fuel cell converts chemical energy to electrical energy using a reaction that _____

- a) eliminates combustion of fuel**
- b) requires combustion of fuel
- c) requires no ignition of fuel
- d) fuel is not required.

33. Fuel cell performance is not limited by _____

- a) First law of Thermodynamics
- b) Second law of Thermodynamics**
- c) Third law of Thermodynamics
- d) All three laws are applicable

34. For which of these devices does negative charge carriers flow from anode to cathode in the external circuit?

- a) MHD generator
- b) Thermionic generator
- c) Thermoelectric generator
- d) Fuel cell**

35. The fuel cell is considered a battery in which _____ is continuously replaced.

- a) fuel only
- b) oxidizer
- c) both fuel and oxidizer**
- d) none of the mentioned

36. The type of reactions in a fuel cell is not determined by _____

- a) fuel and oxidizer combination
- b) composition of electrolyte
- c) materials of anode and cathode
- d) catalytic effects of reaction container**

37. What is the voltage output of hydrogen-oxygen fuel cell?(in V)

- a) -1.23**
- b) -1.45
- c) -1.01
- d) -.93

38. What is the voltage output of carbon-oxygen fuel cell?(in V)

- a) -.91
- b) -1.24
- c) -1.02**
- d) -1.17

39. Which of these gases or liquids are not used as source of hydrogen in fuel cells?

- a) C_2H_6
- b) C_2H_2
- c) C_6H_6
- d) C_2H_5OH**

40. The hydrocarbons cracked with steam in fuel cells do not give rise to _____

- a) CO
- b) CO_2
- c) H_2
- d) H_2O**

41. Which of these should not be a properties of fuel cell electrodes?

- a) good electrical conductors
- b) highly resistant to corrosive environment
- c) should perform charge separation
- d) take part in chemical reactions**

42. Which of these fuel cells operates at high temperatures and pressures?

- a) high temperature solid oxide fuel cell
- b) alkaline fuel cell
- c) molten carbon fuel cell**
- d) phosphoric acid fuel cell

43. A fuel cell is used to convert chemical energy into _____

- a) Mechanical energy
- b) Solar energy
- c) Electrical energy**
- d) Potential energy

44. Select the incorrect statement from the following option.

- a) Fuel cells have high efficiency
- b) The emission levels of fuel cells are far below the permissible limits
- c) Fuel cells are modular
- d) The noise levels of fuel cells are high**

45. _____ and suitable catalyst are required to promote high rate of electrode processes.

- a) Lower temperature
- b) Higher temperature**
- c) Moderate temperature
- d) Very low temperature

46. Fuel cells are free from vibrations, heat transfer and thermal pollution.

- a) True**
- b) False

47. A stable interface between solid _____ liquid _____ and gaseous _____ promotes high rate of electrode processes.

- a) Fuel, electrolyte, electrode
- b) Electrode, fuel, electrolyte
- c) Electrode, electrolyte, fuel**
- d) Fuel, electrode, electrolyte

48. Which of the following is not an example of a fuel cell?

- a) Hydrogen-oxygen cell
- b) Methyl-oxygen-alcohol cell
- c) Propane-oxygen cell
- d) Hexanone-oxygen cell**

49. The electrolytic solution used in a hydrogen-oxygen fuel cell is _____

- a) 75% KOH solution
- b) 25% KOH solution**
- c) 75% NaOH solution
- d) 25% NaOH solution

50. The standard emf of the hydrogen-oxygen fuel cell is _____

- a) 1.23 V**
- b) 2.54 V
- c) 3.96 V
- d) 0.58 V

51. The residual product discharged by the hydrogen-oxygen cell is _____

- a) Hydrogen peroxide
- b) Alcohol
- c) Water**
- d) Potassium permanganate

52. Hydrogen-oxygen fuel cell can produce drinking water of potable quality.

- a) True**
- b) False