

1. The commercial sources of energy are

- (a) solar, wind and biomass
- (b) fossil fuels, hydropower and nuclear energy
- (c) wood, animal wastes and agriculture wastes
- (d) none of the above

Ans: b

2. The proper indication of incomplete combustion is

- (a) high CO content in flue gases at exit
- (b) high CO₂ content in flue gases at exit
- (c) high temperature of flue gases
- (d) the smoking exhaust from chimney

Ans: a

3. India's first nuclear power plant was installed at

- (a) Tarapore
- (b) Kota
- (c) Kalpakkam
- (d) none of the above

Ans: a

4. Carnot cycle comprises of

- (a) two isentropic processes and two constant volume processes
- (b) two isentropic processes and two constant pressure processes
- (e) two isothermal processes and three constant pressure processes
- (d) none of the above

Ans: b

5. In Rankine cycle the work output from the turbine is given by

- (a) change of internal energy between inlet and outlet
- (b) change of enthalpy between inlet and outlet
- (c) change of entropy between inlet and outlet
- (d) change of temperature between inlet and outlet

Ans: b

6. Reheat cycle in steam power plant is used to

- (a) utilise heat of flue gases
- (b) increase thermal efficiency
- (c) improve condenser performance
- (d) reduce loss of heat

Ans: b

7. Binary vapour cycles are used to

- (a) increase the performance of the condenser
- (b) increase the efficiency of the plant
- (c) increase efficiency of the turbine
- (d) reduce loss of heat

Ans: b

8. The modern steam turbines are

- (a) impulse turbines
- (b) reaction turbines
- (c) impulse-reaction turbines
- (d) none of the above

Ans: c

9. Pipes carrying steam are generally made up of

- (a) steel
- (b) cast iron
- (c) copper
- (d) aluminium

Ans: a

10. Belt conveyer can be used to transport coal at inclinations upto

- (a) 30°
- (b) 60°
- (c) 80°
- (d) 90°

Ans: a

11. In India largest thermal power station is located at

- (a) Kota
- (b) Sarni
- (c) Chandrapur
- (d) Neyveli

Ans: c

12. In fuel cell, the _____ energy is converted into electrical energy.

- (a) mechanical
- (b) chemical
- (c) heat
- (d) sound

Ans: b

13. Solar thermal power generation can be achieved by

- (a) using focusing collector or heliostates
- (b) using flat plate collectors
- (c) using a solar pond
- (d) any of the above system

Ans: d

14. The overall efficiency of thermal power plant is equal to

- (a) Rankine cycle efficiency
- (b) Carnot cycle efficiency
- (c) Regenerative cycle efficiency
- (d) Boiler efficiency x turbine efficiency x generator efficiency

Ans: c

15. Rankine cycle efficiency of a good steam power plant may be in the range of

- (a) 15 to 20 percent
- (b) 35 to 45 percent
- (c) 70 to 80 percent
- (d) 90 to 95 percent

Ans: b

16. Rankine efficiency of a steam power plant

- (a) improves in summer as compared to that in winter
- (b) improves in winter as compared to that in summer
- (c) is unaffected by climatic conditions
- (d) none of the above

Ans: b

17. Regenerative cycle thermal efficiency

- (a) is always greater than simple Rankine thermal efficiency
- (b) is greater than simple Rankine cycle thermal efficiency only when steam is bled at particular pressure
- (c) is same as simple Rankine cycle thermal efficiency
- (d) is always less than simple Rankine cycle thermal efficiency

Ans: a

18. In regenerative cycle feed water is heated by

- (a) exhaust gases
- (b) heaters
- (c) draining steam from the turbine
- (d) all above

Ans: c

19. Reheat cycle in steam power plant is used to

- (a) utilise heat of flue gases
- (b) increase thermal efficiency
- (c) improve condenser performance
- (d) reduce loss of heat

Ans: b

20. Mercury is a choice with steam in binary vapour cycle because it has

- (a) higher critical temperature and pressure
- (b) higher saturation temperature than other fluids
- (c) relatively low vapourisation pressure
- (d) all above

Ans: d

21. Binary vapour cycles are used to

- (a) increase the performance of the condenser
- (b) increase the efficiency of the plant
- (c) increase efficiency of the turbine

Ans: b

22. Economiser is used to heat

- (a) air
- (b) feed water
- (c) flue gases
- (d) all above

Ans: b

23. The modern steam turbines are

- (a) impulse turbines
- (b) reaction turbines
- (c) impulse-reaction turbines
- (d) none of the above

Ans: c

24. The maximum length of a screw conveyer is about

- (a) 30 metres
- (b) 40 metres
- (c) 60 metres
- (d) 100 metres

Ans: a

25. The average ash content in Indian co als is about

- (a) 5%
- (b) 10%
- (c) 15%
- (d) 20%

Ans: d