MCQ اسئلة الاختيار المتعدد لمادة محطات التوليد

1. The ideal cycle on which steam engine works is …(b)…
a) Carnot cycle   b) Rankine Cycle   c) Otto cycle
d) Joule Cycle

2. In the Rankine cycle with super heated steam, … (d) …
a) The work done increases
b) The dryness fraction of steam after isentropic expansion increases
c) The specific steam consumption decreases
d) all the above

3. In the fire tube boilers :… (b)…
a) Water passes through the tubes which are surrounded by flames and hot gases
b) The flames and hot gases pass through the tubes which are surrounded by water
c) Forced circulation takes place
d) None of the above

4. Water tube boiler produce steam at a … (b) … pressure than that of fire tube boilers.
a) lower   b) higher

5. A device used to increase the temperature of saturated steam without raising its pressure, is called …(c)…
a) blow off cock   b) fusible plug   c) superheater   d) economizer

6. A device used to heat feed water by utilizing the heat in the exhaust flue gases before leaving through the chimney, is known as …(b)…
a) superheater   b) economizer   c) blow off cock   d) stop valve

7. An economizer …(a) …the steam raising capacity of a boiler
a) increases   b) decreases   c) has no effect

8. An air preheater …(d)…
   a) Increases evaporative capacity of the boiler
   b) Increases the efficiency of the boiler
   c) Enable low grade fuel to be burnt
   d) All of the above

9. When the enthalpy or total heat of steam is h kJ/kg and the enthalpy or sensible heat of feed water is h_{fl} kJ/kg, then the factor of evaporation is given by …(a)…

a) $\dfrac{h - h_{fl}}{2257}$
b) $\dfrac{h + h_{fl}}{2257}$
c) $\dfrac{h * h_{fl}}{2257}$
d) $\dfrac{h}{h_{fl} * 2257}$

10. In a boiler, various heat losses take place. The biggest loss is due to …(b)…
   a) moisture in fuel   b) dry flue gases   c) steam formation
   d) unburnt carbon

11. The mechanical draught produces …(a)... draught than natural draught
   a) more   b) less

12. The mechanical draught …(b)... the amount of smoke
   a) increases   b) decreases   c) does not effect

13. The efficiency of the plant …(a)…with the mechanical draught
   a) increases   b) decreases   c) remains constant

14. The velocity of flue gases (V) through the chimney under a static draught of H' meters is …(b)…
   a)$4.43 H'$ b) $4.43\sqrt{H'}$ c) $(4.43 H')^2$ d)$4.43(H')^2$

15. Maximum discharge through the chimney occurred, when the flue gases temperature should be slightly …(b)... than double the air temperature.
   a) Less   b) more   c) equal

16. …(c) .. draught taken place if the fan is placed in the entrance of the boiler furnace.
1. Induced   b) natural   c) forced   d) not equal

17. For the …(b)…. the pressure inside the furnace is below the atmospheric pressure.
   a) Forced draught   b) induced draught   c) natural draught

18. A condenser in a steam power plant …(d)…
   a) increases expansion ratio of steam
   b) reduces back pressure of steam
   c) reduces temperature of exhaust steam
   d) all of these

19. The temperature of condensate is …(a)… on leaving the condenser than that of circulating water at inlet

a) higher   b) lower   c)same effect

20. The steam leaves the nozzle at a …(d)…
    a) high pressure and low velocity   b)high pressure and high velocity
    c) low pressure and low velocity   d) low pressure and high velocity

21. The effect of friction in nozzle …(a)... dryness fraction of steam
    a) increases   b) decreases   c) no effect on

22. The critical pressure ratio for initially superheated steam is …(b)... as compared to initially dry saturated steam
    a) more   b) less

23. The flow of steam is super sonic …(d)…
    a) at the entrance to the nozzle
    b) at the throat of the nozzle
    c) in the convergent portion of the nozzle
    d) in the divergent portion of the nozzle

24. In an impulse turbine …(a)…
    a) the steam is expanded in nozzles only and there is a pressure drop and heat drop
    b) the steam is expanded both in fixed and moving blades continuously
    c) the steam is expanded in moving blades only
    d) the pressure and temperature of steam remains constant

25. In impulse turbines, when friction is neglected, the relative velocity of steam at outlet of the blade is …(a)… the relative velocity of steam at inlet tip of the blade
    a) equal to   b) less than   c) greater than

26. The blade friction in the impulse turbine reduced the velocity of steam by …(a)...while passes over the blades
    a)10 to 15%   b)15 to 20%   c)20 to 30%   d)30 to 40%

27. In the indirect contact (shell and tube) steam condenser, steam is …(a)…
    (a) flow separately and don't mix with cooling water.
    (b) mix with cooling water.
    (c) cool by ventilation air.

28. Through the flow across the nozzle, the steam …(a)...
    (a) pressure decrease and the flow velocity increased.

(b) pressure and flow velocity will decreased.

(c) pressure increase and flow velocity decreased.

29. In the impulse turbine, if the friction effect is neglected. The pressure drops in …(b)…

    (a) nozzle and moving blade.

    (b) nozzle only.

    (c) moving blade only.

    (d) none of them.

30. For the symmetric impulse turbine blade, the blade inlet and exit angles are …(a)…

    (a) equal.

    (b) not equal.

    (c) inlet angle greater than exit angle.

    (d) exit angle greater the inlet angle.

31. In the reaction turbine, the flow expand through …(a)…

    (a) moving and fixed baled.

    (b) fixed blade only.

    (c) moving blade only.

32. In the reaction turbine, the blade profile is …(a)…

    (a) airfoil.

    (b) symmetric.

    (c) convergent.

33. If the steam entering the nozzle as saturated. The critical pressure can be calculated as: …(c)…, where P1 is the inlet pressure.

    (a) $P_c = 0.546 \times P_1$

    (b) $P_c = P_1$

    (c) $P_c = 0.577 \times P_1$

34. For the flow across the boiler, if the friction effect is neglected. The pressure inside the boiler is …(c)…

    (a) increased.

    (b) decreased.

    (c) constant.

35. In the Rankine cycle, the re-heat effect is …(a)…

    (a) increasing the output work and efficiency.

(b) decrease the output work and decrease the efficiency.

(c) none of them.

36. Effect of re-generation the steam in Rankine cycle, …(b)…

    (a) decreasing the cycle efficiency and the output power.

    (b) improving the cycle efficiency.

    (c) decreasing the work required to drive the pumps only.

37. Increasing the boiler pressure in Rankine cycle is to …(b)…

    (a) decrease condenser pressure.

    (b) improving the cycle efficiency.

    (c) improving the pump performance.

38. In the re-generative Rankine cycle, the open feed water heater can be considered …(a)… heat exchanger.

    (a) direct contact.

    (b) indirect contact.

    (c) surface.

39. The working fluid in the Rankine cycle is ……..

    a. natural gas   b. air   c. water   d. refrigerant fluids

40. Re-heating process in the Rankine cycle increase …….

    a. input work   b. output work   c. output heat

41. In the simple Rankine cycle heat added at ……… process.

    a. constant pressure   b. adiabatic process

    c. isentropic   d. constant volume