CLASS - TE

SEMESTER - VI

SUBJECT - TFPE

1. What is the air standard cycle for a Gas-Turbine called ? 1M

a) Reheat cycle
b) Rankine cycle
c) Brayton cycle
d) Diesel cycle

2. Which of the following is a type of Gas Turbine Plant? 1M

a) Single Acting
b) Double Acting
c) Open
d) Reciprocating

3. Power is produced when the working fluid does some work on the? 1M

a) Shaft
b) Fins
c) Blades
d) Nozzle

4. Which among these is the main component of a gas turbine plant? 1M

a) Condenser
b) Compressor
c) Boiler
d) Both Compressor & Boiler

5. The ratio of heat actually released by 1kg of fuel to heat that would be released by complete perfect combustion is called _____ 2M

a) Thermal efficiency
b) Combustion efficiency
c) Engine efficiency
d) Compression efficiency

6. In the _____ heat transfer takes place between the exhaust gases and cool air. 1M

a) Intercooler
b) Re-heater
c) Regenerator
d) Compressor

7. Gas Turbine for power generation are normally used as 1M

(A) base load power plant
(B) peak load power plant
(C) to start thermal power plant

(D) emergency source

8. Which principle is used in Hydraulic Turbines? 1M
a) Faraday law
b) Newton's second law
c) Charles law
d) Braggs law

9. The overall efficiency of a reaction turbine is the ratio of 2M
a) Actual work available at the turbine to the energy imparted to the wheel
b) Work done on the wheel to the energy (or head of water) actually supplied to the turbine
c) Power produced by the turbine to the energy actually supplied by the turbine
d) Actual work available at the turbine to energy imparted to the wheel

10. Calculate work done by jet per second on the runner where, discharge=0.7cubic meters/s, inlet and outlet whirl velocities be 23.77 and 2.94? 2M
a) 200Kw
b) 150Kw
c) 187Kw
d) 250Kw

11. The difference between gross head and friction losses is _____ 1M
a) Net head
b) Gross head
c) Manometric head
d) Net positive suction head

12. Find the diameter of jet D, if jet ratio m and diameter of jet d are given as 10 and 125mm. 2M
a) 1.25 meters
b) 1.5 meters
c) 2 meters
d) 1.2 meters

13. Degree of reaction turbine is the ratio of? 1M
a) Pressure energy to total energy
b) Kinetic energy to total energy
c) Potential energy to total energy
d) Kinetic energy to potential energy

14. The available head of a Francis Turbine is 120 m. The blade velocity is given 35 m/s. Find the speed ratio of the turbine. 2M
a) 0.56
b) 0.61
c) 0.71
d) 0.81

15. To avoid cavitations, which parameter is important? 1M

a) Tail race length
b) Head race length
c) Height of draft tube
d) Pump

16. Specific speed is the speed of the turbine which is similar to its _____. 2M

a) Temperature difference
b) Pressure difference
c) Geometrically similar turbine
d) Speed of rotor

17. Unit speed is the speed of the turbine operating under_____ . 1M

a) One-meter head
b) Pressure head
c) Volumetric head
d) Draft tube

18. Constant head curves are also called as _____. 2M

a) Head race curves
b) Tail race curves
c) Main characteristic curves
d) Impeller curves

19. An economiser in a boiler..... 1M

a) Increases steam pressure
b) Increases steam flow
c) Decreases fuel consumption
d) Decreases steam pressure

20. The increase in pressure 1M

(a) lowers the boiling point of a liquid
(b) raises the boiling point of a liquid
(c) does not affect the boiling point of a liquid
(d) reduces its volume

21. Equivalent evaporation is the amount of water evaporated in a boiler from and at 1M

(a) 0°C
(b) 100°C
(c) saturation temperature at given pressure
(d) room temperature

22. A steam nozzle converts 1M

(A) Heat energy of steam into kinetic energy
(B) Kinetic energy into heat energy of steam
(C) Heat energy of steam into potential energy

(D) Potential energy into heat energy of steam

23. The factor of evaporation for all boilers is always 1M
(A) Equal to unity
(B) Less than unity
(C) Greater than unity
(D) Greater than 100

24. Fire tube boilers are
(A) Internally fired
(B) Externally fired
(C) Internally as well as externally fired
(D) They does not required burning of fuel

25. The number of drums in Benson steam generator is 1M
(A) One
(B) Two
(C) One steam drum and one water drum
(D) No drum

26. In forced circulation steam boilers, the force is applied 1M
(A) To draw water
(B) To circulate water
(C) To drain off the water
(D) To evaporate water

27. Which of the following Is boiler accessories? 1M
(A) Fusible Plug
(B) Superheater
(C) Pressure Gauge
(D) Feed Check Valve

28. A single stage impulse turbine with a diameter of 1.2 m runs at 3000 r.p.m. If the blade speed ratio is 0.42, then the inlet velocity of steam will be 2M
(A) 79 m/s
(B) 188 m/s
(C) 450 m/s
(D) 900 m/s

29. When steam reaches turbine blades the type of force responsible for moving turbine blades are _____ 2M

(A) Axial force
(B) Shear force

(C) Longitudinal force
(D) Radial force

30. Compounding of turbine is done for…. 1M

(A) Reducing speed of the rotor
(B) Increasing speed of the rotor
(C) Increasing pressure of the rotor
(D) Decreasing pressure of the rotor

31. The person's reaction turbine has..... 2M

(A) Only moving blades
(B) Only fixed blades
(C) Identical moving and fixed blades
(D) Fixed and moving blades of different shape

32. In an impulse turbine, steam expands 1M

(A) Wholly in blades
(B) Wholly in nozzle
(C) Partly in the nozzle and partly in blades
(D) Does not expanD

33. The condition of steam in boiler drum is always 1M
(A) Dry
(B) Wet
(C) Saturated
(D) Supersaturated

34. The blade speed ratio of impulse turbine is given as _____ 2M

(A) (Blade velocity) / (Steam velocity at inlet)
(B) (Blade velocity) / (Steam velocity at exit)
(C) (Steam velocity at inlet) / (Blade velocity)
(D) (Steam velocity at exit) / (Blade velocity)

35. In a jet propulsion 1M
(A) The propulsive matter is ejected from within the propelled body
(B) The propulsive matter is caused to flow around the propelled body
(C) Its functioning does not depend upon presence of air
(D) Internal combustion engine is used.

36. Turboprop is preferred to turbojet because 2M

(A) It has high propulsive efficiency at high speeds

(B) It can fly at supersonic speeds
(C) It can fly at high elevations
(D) It has high power for take off

37. When the nozzle operates with the maximum mass flow, the nozzle is said to be 1M

(A) Choked

(B) Under-damp

(C) Over-damp

(D) semi damp

38. The passage of uniformly varying cross-section in which the kinetic energy of steam increases at the expense of its pressure is called as_____ 2M

(A) steam turbine
(B) steam nozzle
(C) steam box
(D) pump