MCQ TEST OF POWER PLANT ENGINEERING

* Required

1. NAME OF STUDENT *

2. ENROLLMENT NO. *

Thermal Power Plant:

3. The commercial sources of energy are * 1 point

Mark only one oval.

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

4. What would be the most important factor under consideration for the site selection of a thermal plant? 1 point

Mark only one oval.

- a. Availability of fuel.
- b. Availability of water.
- c. Distance from the populated area.
- d. Cost and the type of land.

5. Modern steam plants works on which of the following cycles? 1 point

Mark only one oval.

- a. Carnot cycle
- b. Rankine cycle
- c. Otto cycle
- d. Bell- Coleman cycle

6. In India largest thermal power station is located at * 1 point

Mark only one oval.

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

7. The percentage O2 by Weight in atmospheric air is 1 point

Mark only one oval.

- (a) 18%
- (b) 23%
- (c) 77%
- (d) 79%

8. The percentage 02 by volume in atmosphere air is 1 point

Mark only one oval.

- (a) 21%
- (b) 23%
- (c) 77%
- (d) 79%

9. The proper indication of incomplete combustion is 1 point

Mark only one oval.

- (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

10. The main source of production of bio gas is 1 point

Mark only one oval.

- (a) human waste
- (b) wet cow dung
- (c) wet livestock waste
- (d) all above

11. India's first nuclear power plant was installed at 1 point

Mark only one oval.

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

12. In fuel cell, the _____ energy is converted into electrical energy. 1 point

Mark only one oval.

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

13. The energy radiated by sun on a bright sunny day is approximately 1 point

Mark only one oval.

- (a) 700 W/m2
- (b) 800 W/m2
- (c) 1 kW/m2
- (d) 2 kW/m2

14. Thorium Breeder Reactors are most suitable for India because 1 point

Mark only one oval.

- (a) these develop more power
- (b) its technology is simple
- (c) abundance of thorium deposits are available in India
- (d) these can be easily designed

15. The overall efficiency of thermal power plant is equal to 1 point

Mark only one oval.

- (a) Rankine cycle efficiency
- (b) Carnot cycle efficiency
- (c) Regenerative cycle efficiency
- (d) Boiler efficiency x turbine efficiency x generator efficiencyon 1

16. A steam power station requires space 1 point

Mark only one oval.

- (a) equal to diesel power station
- (b) more than diesel power station
- (c) less than diesel power station

17. Rankine efficiency of a steam power plant 1 point

Mark only one oval.

- (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

18. Rankine cycle efficiency of a good steam power plant may be in the range of 1 point

Mark only one oval.

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

19. Steam turbines commonly used in steam power station are 1 point

Mark only one oval.

- (a) condensing type
- (b) non-condensing type
- (c) none of the above

High Pressure Boilers:

20. Blowing down of boiler water is the process 1 point

Mark only one oval.

- (a) to reduce the boiler pressure
- (b) to increase the steam temperature
- (c) to control the solid concentration in the boiler water by removing some of the concentrated saline water
- (d) none of the above

21. What type of boiler is a Lamont boiler? 1 point

Mark only one oval.

- a) Forced circulation
- b) Natural circulation
- c) Over-through
- d) Positive forced circulation

22. What is called as the heart of the Lamont boiler? 1 point

Mark only one oval.

- a) Water drum
- b) Centrifugal pump
- c) Furnace
- d) Blower

23. What is the pressure range between which Lamont boilers operates? 1 point

Mark only one oval.

- a) 80-120bar
- b) 120-160bar
- c) 180-360bar
- d) 450-560bar

24. What type of boiler is a Benson boiler? 1 point

Mark only one oval.

- a) Super critical boiler
- b) Fire tube boiler
- c) Natural circulation boiler
- d) Over-through boiler

25. What is the major disadvantage of the Benson boilers? 1 point

Mark only one oval.

- a) Boiler is big in size
- b) Has large storage capacity
- c) Deposition of salts
- d) Bubble formation

26. Why starting valve is closed and valve 2 is opened while taking boiler on range in Benson boiler? 1 point

Mark only one oval.

- a) Avoid excessive heating of tube
- b) To maintain the constant flow of water
- c) To avoid pressure built up in tubes
- d) To avoid pipe leakages at joints

27. Which of the given boilers velocity of flue gases is greater than velocity of sound? 1 point

Mark only one oval.

- a) Benson boiler
- b) La-Mont boiler
- c) Schmidt-Hartmann boiler
- d) Velox boiler

28. Which boiler is most successful boiler in the gas turbine industries? 1 point

Mark only one oval.

- a) Because it has greater flexibility
- b) It is easy to control, it's fully automatic
- c) It has higher thermal efficiency of all
- d) Can increase heat transfer without changing its size

29. What type of boiler is a Velox boiler? 1 point

Mark only one oval.

- a) Forced circulation boiler
- b) Natural circulation boiler
- c) Positively forced circulation boiler
- d) Once- through boiler

30. How many circuits are there in the Schmidt-Hartmann boiler? 1 point

Mark only one oval.

- a) 3
- b) 2
- c) 4
- d) 6

31. Which type of circulation is incurred in Schmidt-Hartmann boiler? 1 point

Mark only one oval.

- a) Natural circulation
- b) Positive forced circulation
- c) Forced circulation
- d) Once-through circulation

32. Why are salts deposited on the evaporator drum? 1 point

Mark only one oval.

- a) Due to continuous circulation of water
- b) Due to usage of hard water containing calcium content
- c) Due to circulation of impure water
- d) Due to the chemicals added in water

33. Overheating doesn't occur in components of primary circuit Schmidt-Hartmann boiler? 1 point

Mark only one oval.

- a) True
- b) False

34. What is feature of the Loffler boilers? 1 point

Mark only one oval.

- a) Evaporating water by super heated steam
- b) Provide better efficiency by re-circulating gas coming out of turbine
- c) Produce better steam quality by heating the boiler furnace above critical degrees
- d) Eliminate the extra components used

35. What is the major difficulty of the La-Mont boiler? 1 point

Mark only one oval.

- a) Unstable water circulation
- b) Deposition of salts
- c) Overheating of the components
- d) Boiler working is slow

36. At what temperature is the water in convection super heater is heated of Loffler boiler? 1 point

Mark only one oval.

- a) 200oC
- b) 300oC
- c) 400oC
- d) 500oC

37. Which of the following boilers has the highest heat transfer capacity? 1 point

Mark only one oval.

- a) Subcritical boiler
- b) Critical boiler
- c) Forced circulation boiler
- d) Supercritical boiler

38. What is done to increase the rate of heat transfer in the Velox boiler? 1 point

Mark only one oval.

- a) The boiler is heated upto very high range of temperature
- b) The size of the boiler is changed as it is flexible
- c) High grade fuel is made use for the combustion
- d) Combustion gases are circulated through tubes with supersonic speed

39. What is the main advantage of the usage of high pressure boilers in a thermal plant? 1 point

Mark only one oval.

- a. Lower price
- b. Increase in efficiency
- c. Low grade fuel can be burnt.
- d. Both (b) and (c)

40. The efficiency of a modern boiler using coal and heat recovery equipment is about 1 point

Mark only one oval.

- (a) 25 to 30%
- (b) 40 to 50%
- (c) 65 to 70%
- (d) 85 to 90%

41. Steam pressure in a steam power station, which is usually kept now-a-days is of the order of 1 point

Mark only one oval.

- (a) 20 kgf/cm2
- (b) 50 kgf/cm2
- (c) 100 kgf/cm2
- (d) 150 kgf/cm2

Coal and Ash Handling Systems:

42. The average ash content in Indian co als is about 1 point

Mark only one oval.

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

43. Caking coals are those which 1 point

Mark only one oval.

- (a) burn completely
- (b) burn freely
- (c) do not form ash
- (d) form lumps or masses of coke

44. Primary air is that air which is used to 1 point

Mark only one oval.

- (a) reduce the flame length
- (b) increase the flame length
- (c) transport and dry the coal
- (d) provide air around burners for get¬ting optimum combustion

45. Secondary air is the air used to 1 point

Mark only one oval.

- (a) reduce the flame length
- (b) increase the flame length
- (c) transport and dry the coal
- (d) provide air round the burners for getting optimum combustion

46. In coal preparation plant, magnetic separators are used to remove 1 point

Mark only one oval.

- (a) dust
- (b) clinkers
- (c) iron particles
- (d) sand

47. Method which is commonly applied for unloading the coal for small power plant is 1 point

Mark only one oval.

- (a) lift trucks
- (b) coal accelerators
- (c) tower cranes
- (d) belt conveyor

48. Bucket elevators are used for 1 point

Mark only one oval.

- (a) carrying coal in horizontal direction
- (b) carrying coal in vertical direction
- (c) carrying coal in any direction

49. The following is (are) ash handling system(s) 1 point

Mark only one oval.

- (A) Hydraulic system
- (B) Pneumatic system
- (C) Steam jet system
- (D) All of the above

50. The major constituent of fly ash is 1 point

Mark only one oval.

- (A) Silicon dioxide
- (B) Aluminium oxide
- (C) Calcium oxide
- (D) Magnesium oxide

51. Ash is widely used in the production of _____ 1 point

Mark only one oval.

- a) Plastics
- b) Thermal wear
- c) Food oxidants
- d) Cement

52. What is the India's current total capacity of power plants installed? 1 point

Mark only one oval.

- a) 84000MW
- b) 92000MW
- c) 28000MW
- d) 150000MW

53. How much percent of fly ash is, mixed with Portland cement? 1 point

Mark only one oval.

- a) 10 to 25%
- b) 5 to 10%
- c) 30 to 50%
- d) 50%

54. How much time period is fly ash stone powder cement bricks water cured? 1 point

Mark only one oval.

- a) A week
- b) 2 weeks
- c) 3 weeks
- d) 1 month

55. How much amount of fly ash is made utilized by India? 1 point

Mark only one oval.

- a) 3 – 4%
- b) 10 – 20%
- c) 50 – 60%
- d) 35 – 55%

56. What is the role of breaker house in coal feeding? 1 point

Mark only one oval.

- a) To break the coal into smaller pieces
- b) To separate different sizes of coal
- c) To separate the light dust from the coal
- d) To powder the coal

57. When coal is being burnt how much % of ash is formed compared to the whole amount? 1 point

Mark only one oval.

- a) 10-20%
- b) 40-50%
- c) 25-35%
- d) 4-10%

58. Why is it important to prefer ash handling systems? 1 point

Mark only one oval.

- a) Coal ash produced destroys the machineries by entering into them
- b) Coal ash produced annually accounts for thousands of tones
- c) Coal ash can be reutilized for some other purpose
- d) Coal ash affects the health of people working at plants

59. The coal is fed to the furnace through _____ 1 point

Mark only one oval.

- a) conveyor belt
- b) wagon tipper
- c) hopper
- d) crane

60. Which system consumes less power out of all ash handling systems? 1 point

Mark only one oval.

- a) Mechanical ash handling system
- b) Pneumatic ash handling system
- c) Hydraulic ash handling system
- d) Steam jet ash handling system

61. Which medium is used to carry ash in hydraulic system? 1 point

Mark only one oval.

- a) Air
- b) Water
- c) Steam
- d) Conveyor

62. What would be the amount of distance that a low pressure system could carry the ash? 1 point

Mark only one oval.

- a) 25m
- b) 500m
- c) 150m
- d) 800m

63. What is the capacity of low pressure hydraulic ash handling system? 1 point

Mark only one oval.

- a) 80 tonnes/hour
- b) 22 tonnes/hour
- c) 50 tonnes/hour
- d) 10 tonnes/hour

64. _____ and _____ are the common problems on pipeline inner walls when the slurry contains calcium, magnesium and sulphate ashes. 1 point

Mark only one oval.

- a) Clogs and Corrosion
- b) Scaling and Cracks
- c) Pores and Contamination
- d) Scaling and Cementation

65. Which of the following ash is suitable for selling? 1 point

Mark only one oval.

- a) Bed ash
- b) Synthetic gypsum
- c) Fly ash
- d) Clinkers

66. The following is not a pulverized fuel burner. 1 point

Mark only one oval.

- (A) Tangential burner
- (B) Turbulent burner
- (C) Cyclone burner
- (D) Radial burner

Draught System:

67. The draught which a chimney produces is called 1 point

Mark only one oval.

- (a) induced draught
- (b) natural draught
- (c) forced draught
- (d) balanced draught

68. The draught produced by steel chimney as compared to that produced by brick chimney for the same height is 1 point

Mark only one oval.

- (a) less
- (b) more
- (c) same
- (d) may be more or less

69. In a boiler installation the natural draught is produced 1 point

Mark only one oval.

- (a) due to the fact that furnace gases being light go through the chimney giving place to cold air from outside to rush in
- (b) due to the fact that pressure at the grate due to cold column is higher than the pressure at the chimney base due to hot column
- (c) due to the fact that at the chimney top the pressure is more than its environmental pressure
- (d) all of the above

70. The draught produced, for a given height of the chimney and given mean temperature of chimney gases 1 point

Mark only one oval.

- (a) decreases with increase in outside air temperature
- (b) increases with increase in outside air temperature
- (c) remains the same irrespective of outside air temperature
- (d) may increase or decrease with increase in outside air temperature

71. The draught produced by chimney of given height at given outside temperature 1 point

Mark only one oval.

- (a) decreases if the chimney gas temperature increases
- (b) increases if the chimney gas temperature increases
- (c) remains same irrespective of chimney gas temperature
- (d) may increase or decrease

72. For forced draught system, the function of chimney is mainly 1 point

Mark only one oval.

- (a) to produce draught to accelerate the combustion of fuel
- (b) to discharge gases high up in the atmosphere to avoid hazard
- (c) to reduce the temperature of the hot gases discharged
- (d) none of the above

73. Artificial draught is produced by 1 point

Mark only one oval.

- (a) induced fan
- (b) forced fan
- (c) induced and forced fan
- (d) all of the above

74. The draught in locomotive boilers is produced by 1 point

Mark only one oval.

- (a) forced fan
- (b) chimney
- (c) steam jet
- (d) only motion of locomotive

75. Which of the following given below as the affect on amount natural draught? 1 point

Mark only one oval.

- a) Boiler operation
- b) Size of the furnace
- c) Grade of the fuel
- d) Dust content in the fuel is used

76. What is installed to transfer air into furnace in forced draught system? 1 point

Mark only one oval.

- a) Air blower
- b) Tuyeres
- c) Draft gauges
- d) Cyclone separator

77. The portion of flue gases carried away to produce draught could be utilized to _____ 1 point

Mark only one oval.

- a) Heat the air entering furnace
- b) Blow out the combustion products such as soot and ash
- c) Heat the fuel in ash chamber
- d) Support the combustion

78. Which is the correct formula of total draught loss? 1 point

Mark only one oval.

- a) Ht = Hv + Hb + Hc + Hcd
- b) Ht = Hv + Hb − Hc + Hcd
- c) Ht = Hv − Hb + Hc + Hcd
- d) Ht = Hv − Hb − Hc − Hcd

79. For the same draught produced the power of induced draught fan as compared to forced draught fan is 1 point

Mark only one oval.

- (a) less
- (b) more
- (c) same
- (d) not predictable

80. The artificial draught normally is designed to produce 1 point

Mark only one oval.

- (a) less smoke
- (b) more draught
- (c) less chimney gas temperature
- (d) all of the above

81. For the induced draught the fan is located 1 point

Mark only one oval.

- (a) near bottom of chimney
- (b) near bottom of furnace
- (c) at the top of the chimney
- (D) anywhere permissible

82. The pressure at the furnace is minimum in case of 1 point

Mark only one oval.

- (a) forced draught system
- (b) induced draught system
- (c) balanced draught system
- (d) natural draught system

83. The efficiency of chimney is approximately 1 point

Mark only one oval.

- (a) 80%
- (b) 40%
- (c) 20%
- (d) 0.25%

Steam Nozzles:

84. The isentropic expansion of steam through nozzle for the steam initially superheated at inlet is approximated by equation 1 point

Mark only one oval.

- (a) pvls=C
- (b) pv1126 = C
- (c) pv1A = C
- (d) pv = C

85. The ratio of exit pressure to inlet pressure for maximum mass flow rate per unit area of steam through a nozzle when steam is initially dry saturated is 1 point

Mark only one oval.

- (a) 0.6
- (6) 0.578
- (c) 0.555
- (d) 0.5457

86. The ratio of exit pressure to inlet pressure of maximum mass flow rate per area of steam through a nozzle when steam is initially superheated is 1 point

Mark only one oval.

- (a) 0.555
- (b) 0.578
- (c) 0.5457
- (d) 0.6

87. The critical pressure ratio of a convergent nozzle is defined as 1 point

Mark only one oval.

- (a) the ratio of outlet pressure to inlet pressure of nozzle
- (b) the ratio of inlet pressure to outlet pressure of nozzle
- (c) the ratio of outlet pressure to inlet pressure only when mass flow rate per unit area is minimum
- (d) the ratio of outlet pressure to inlet pressure only when mass flow rate = c

88. The isentropic expansion of steam through nozzle for the steam initially dry saturated at inlet is approximated by equation. 1 point

Mark only one oval.

- (a)pv = C
- (b)pv1A = C
- (c)pv1i = C
- (d)pv

89. The effect of considering friction losses in steam nozzle for the same pressure ratio leads to 1 point

Mark only one oval.

- (a) increase in exit velocity from the nozzle
- (6) decrease in exit velocity from the nozzle
- (c) no change in exit velocity from the nozzle
- (d) increase or decrease depending upon the exit quality of steam

90. The effect of considering friction in steam nozzles for the same pressure ratio leads to 1 point

Mark only one oval.

- (a) increase in dryness fraction of exit steam
- (b) decrease in dryness fraction of exit steam
- (c) no change in the quality of exit steam
- (d) decrease or increase of dryness fraction of exit steam depending upon inlet quality

Steam turbine:

91. In case of impulse steam turbine 1 point

Mark only one oval.

- (a) there is enthalpy drop in fixed and moving blades
- (b) there is enthalpy drop only in moving blades
- (c) there is enthalpy drop in nozzles
- (d) none of the above

92. The pressure on the two sides of the impulse wheel of a steam turbine 1 point

Mark only one oval.

- (a) is same
- (b) is different
- (c) increases from one side to the other side
- (d) decreases from one side to the other side

93. In De Laval steam turbine 1 point

Mark only one oval.

- (a) the pressure in the turbine rotor is approximately same as in con¬denser
- (b) the pressure in the turbine rotor is higher than pressure in the con¬denser
- (c) the pressure in the turbine rotor gradually decreases from inlet to exit from condenser
- (d) none from the above

94. Incase of reaction steam turbine 1 point

Mark only one oval.

- (a) there is enthalpy drop both in fixed and moving blades
- (b) there is enthalpy drop only in fixed blades
- (c) there is enthalpy drop only in moving blades
- (d) none of the above

95. Curtis turbine is 1 point

Mark only one oval.

- (a) reaction steam turbine
- (b) pressure velocity compounded steam turbine
- (c) pressure compounded impulse steam turbine
- (d) velocity compounded impulse steam turbine

96. Rateau steam turbine is 1 point

Mark only one oval.

- (a) reaction steam turbine
- (b) velocity compounded impulse steam turbine
- (c) pressure compounded impulse steam turbine
- (d) pressure velocity compounded steam turbine

97. Parson's turbine is 1 point

Mark only one oval.

- (a) pressure compounded steam turbine
- (b) simple single wheel, impulse steam turbine
- (c) simple single wheel reaction steam turbine
- (d) multi wheel reaction steam turbine

98. For Parson's reaction steam turbine, degree of reaction is 1 point

Mark only one oval.

- (a) 75%
- (b) 100%
- (c) 50%
- (d) 60%

99. Reheat factor in steam turbines depends on 1 point

Mark only one oval.

- (a) exit pressure only
- (b) stage efficiency only
- (c) initial pressures and temperature only
- (d) all of the above

100. Steam turbines are governed by the following methods 1 point

Mark only one oval.

- (a) Throttle governing
- (b) Nozzle control governing
- (c) By-pass governing
- (d) all of the above

101. In steam turbines the reheat factor 1 point

Mark only one oval.

- (a) increases with the increase in number of stages
- (b) decreases with the increase in number of stages
- (c) remains same irrespective of number of stages
- (d) none of the above

Condensers and Cooling Towers:

102. The thermal efficiency of the engine with condenser as compared to without condenser, for a given pressure and temperature of steam, is 1 point

Mark only one oval.

- (a) higher
- (b) lower
- (c) same as long as initial pressure and temperature is unchanged
- (d) none of the above

103. In jet type condensers 1 point

Mark only one oval.

- (a) cooling water passes through tubes and steam surrounds them
- (b) steam passes through tubes and cooling water surrounds them
- (c) steam and cooling water mix
- (d) steam and cooling water do not mix

104. In a shell and tube surface condenser 1 point

Mark only one oval.

- (a) steam and cooling water mix to give the condensate
- (b) cooling water passes through the tubes and steam surrounds them
- (c) steam passes through the cooling tubes and cooling water surrounds them
- (d) all of the above varying with situation

105. In a surface condenser if air is removed, there is 1 point

Mark only one oval.

- (a) fall in absolute pressure maintained in condenser
- (b) rise in absolute pressure maintained in condenser
- (c) no change in absolute pressure in the condenser
- (d) rise in temperature of condensed steam

106. The cooling section in the surface condenser 1 point

Mark only one oval.

- (a) increases the quantity of vapour extracted along with air
- (b) reduces the quantity of vapour extracted along with air
- (c) does not affect vapour quantity extracted but reduces pump capacity of air extraction pump
- (d) none of the above

107. Edward's air pump 1 point

Mark only one oval.

- (a) removes air and also vapour from condenser
- (b) removes only air from condenser
- (c) removes only un-condensed vapour from condenser
- (d) removes air alongwith vapour and also the condensed water from condenser

108. In a steam power plant, the function of a condenser is 1 point

Mark only one oval.

- (a) to maintain pressure below atmospheric to increase work output from the primemover
- (b) to receive large volumes of steam exhausted from steam prime mover
- (c) to condense large volumes of steam to water which may be used again in boiler
- (d) all of the above

109. In a regenerative surface condenser 1 point

Mark only one oval.

- (a) there is one pump to remove air and condensate
- (b) there are two pumps to remove air and condensate
- (c) there are three pumps to remove air, vapour and condensate
- (d) there is no pump, the condensate gets removed by gravity

110. Evaporative type of condenser has 1 point

Mark only one oval.

- (a) steam in pipes surrounded by water
- (b) water in pipes surrounded by steam
- (c) either (a) or (b)
- (d) none of the above

111. Pipes carrying steam are generally made up of 1 point

Mark only one oval.

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

Feed Water Treatment:

112. What is the normal range of pH of water to be maintained in the steam rising in the thermal power station? 1 point

Mark only one oval.

- a. 3.5
- b. 7.02
- c. 8.5
- d. 9.87

113. Which of the following should not be a composition of boiler-feed water? 1 point

Mark only one oval.

- a) Hardness should be below 0.2ppm
- b) Its caustic alkalinity should lie between 0.15 to 0.45 ppm
- c) Its soda alkalinity should be 0.45-1 ppm
- d) Its caustic alkalinity should be 1.5-2 ppm

114. Which of the following is not a result of excess of impurity in boiler-feed? 1 point

Mark only one oval.

- a) Scale and sludge formation
- b) Decomposition
- c) Corrosion, priming and foaming
- d) Caustic embrittlement

115. If the precipitate formed is soft, loose and slimy, these are _____ and if the precipitate is hard and adhering on the inner wall, it is called _____. 1 point

Mark only one oval.

- a) Sludges, scale
- b) Scale, sludges
- c) Sludges, rodent
- d) Scale, rodent

116. State true or false. The scales decrease the efficiency of boiler and chances of explosions are also there. 1 point

Mark only one oval.

- a) True
- b) False

117. The propulsion of water into steam drum by extremely rapid, almost explosive boiling of water at the heating surface is called 1 point

Mark only one oval.

- a) Foaming
- b) Priming
- c) Corrosion
- d) Caustic embrittlement

118. The phenomenon during which the boiler material becomes brittle due to accumulation of caustic substances is known as 1 point

Mark only one oval.

- a) Foaming
- b) Priming
- c) Corrosion
- d) Caustic embrittlement

119. Foaming is caused by the formation of 1 point

Mark only one oval.

- a) Acids
- b) Alcohols
- c) Oils and alkalis
- d) Ketones

120. Corrosion is the decay or disintegration of boiler body material either due to chemical or electrochemical reaction with environment. 1 point

Mark only one oval.

- a) True
- b) False

121. An addition of small dose of chlorine gas to the filtered water is known as 1 point

Mark only one oval.

- coagulation
- sedimentation
- filtration
- chlorination

122. The process in which water is passed through filter beds of sand and gravel to remove smaller particles of dust is called 1 point

Mark only one oval.

- coagulation
- sedimentation
- filtration
- chlorination

Gas turbine:

123. Gas turbines are suitable for aircraft propulsion because 1 point

Mark only one oval.

- a. gas turbines are light weight
- b. gas turbines are compact in size
- c. gas turbines have a high power-to-weight ratio
- d. all of the above

124. The major field(s) of application of gas turbine is (are) 1 point

Mark only one oval.

- Aviation
- Oil and gas industry
- Marine propulsion
- All of the above

125. The following is (are) the limitation(s) of gas turbines. 1 point

Mark only one oval.

- They are not self starting
- Higher rotor speeds
- Low efficiencies at part loads
- All of the above

126. The percentage of total energy input appearing as net work output of the cycle 1 point

Mark only one oval.

- Thermal efficiency
- Combustion efficiency
- Engine efficiency
- Compression efficiency

127. The following method(s) can be used to improve the thermal efficiency of open cycle gas turbine plant 1 point

Mark only one oval.

- inter-cooling
- Reheating
- Regeneration
- All of the above

128. Which of the following is (are) used as starter for a gas turbine 1 point

Mark only one oval.

- An Internal combustion engine
- A steam turbine
- An auxiliary electric motor
- All of the above

129. Gas turbine is shut down by 1 point

Mark only one oval.

- Turning off starter
- Stopping the compressor
- Fuel is cut off from the combustor
- Any of the above

130. The 'work ratio' increases with 1 point

Mark only one oval.

- increase in turbine inlet pressure
- decrease in compressor inlet temperature
- decrease in pressure ratio of the cycle
- all of the above

131. In the _____ heat transfer takes place between the exhaust gases and cool air. 1 point

Mark only one oval.

- Intercooler
- Re-heater
- Regenerator
- Compressor

132. What percent of installed capacity of gas turbines contribute to the total installed capacity of the power plants in India. 1 point

Mark only one oval.

- a. 5 %
- b. 8 %
- c. 11 %
- d. 15 %

133. Which state in India among these doesn't have a gas turbine plant? 1 point

Mark only one oval.

- a. Jammu Kashmir.
- b. Tripura
- c. Tamil Nadu.
- d. Bihar.

134. Gas turbine plants are not used - 1 point

Mark only one oval.

- a. As peak load plants.
- b. As base load plants.
- c. As standby power plants.
- d. In combination with the steam power plants.

135. Fuels used in gas turbines should have _____ ash content. 1 point

Mark only one oval.

- a) low
- b) high
- c) zero
- d) none of the mentioned

136. _____ oil can also be used to operate gas turbine power plants. 1 point

Mark only one oval.

- a) Leaded
- b) Non leaded
- c) Crude fuel
- d) None of the mentioned

Nuclear Power Plant:

137. Minimum quantity of fuel is required..... 1 point

Mark only one oval.

- A.Thermal power plant
- B.Nuclear power plant
- C.Hydro electric power plant
- D.Diesel power plant

138. In which of the following process are Neutrons emitted? 1 point

Mark only one oval.

- a) Inverse beta Decay
- b) Nuclear fission
- c) Spontaneous Fission
- d) Nuclear fusion

139. Why neutrons with lower energy should be capable of causing fission? 1 point

Mark only one oval.

- a) For faster reaction process
- b) For sustained reaction process
- c) For Safety purpose
- d) In order to not waste the nuclear fuel

140. What happens when a neutron is absorbed by a nucleus of an atom of U235? 1 point

Mark only one oval.

- a) Mass number of atom increases
- b) One electron is let out
- c) U236 isotope is formed
- d) Nucleus becomes unstable

141. Who invented nuclear fission? 1 point

Mark only one oval.

- a) Rutherford
- b) Hans Bethe
- c) Otto Hahn
- d) Marie Curie

142. Atoms of different chemical elements that have the same number of nucleons are called as? 1 point

Mark only one oval.

- a) Isobars
- b) Isotones
- c) Isomers
- d) Isotopes

143. What type of Reaction takes place in sun? 1 point

Mark only one oval.

- a) Nuclear fusion
- b) Nuclear fission
- c) Spontaneous fission
- d) Double beta decay

144. Which of the following fuel material occurred naturally? 1 point

Mark only one oval.

- U235
- Pu239
- Pu241
- U-233

145. The function of a moderator is to 1 point

Mark only one oval.

- absorb the part of the Kinetic energy of the neutrons
- extract the heat
- reflect back some of the neutrons
- start the reactor

146. Which of the following is not used as moderator? 1 point

Mark only one oval.

- water
- heavy water
- graphite
- boron