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Subject Name & Code : FLUID MECHANICS & HYDRAULIC MACHINERY (R1621034)

Exam Name : Q2

1. A fluid jet is a stream of fluid issuing from a nozzle with a high velocity and hence a high [B]

A) pressure energy B) kinetic energy C) potential energy D) Flow energy

2. When a jet impinges on a plate or vane it exerts a force on it due to [B]

A) change in density B) change in momentum C) change in pressure D) change in flow

3. The jet after striking the plate will get its direction change through [D]

A) 20 Degrees B) 45 Degrees C) 10 Degrees D) 90 Degrees

4. If the friction is considered the velocity of liquid coming off the plate will be [A]

A) equal to velocity of plate B) more than velocity of plate C) less than velocity of plate D) jet velocity will become zero

5. When the plate is stationary then workdone on the plate will be [A]

A) equal to zero B) more than averge workdone C) less than zero D) more than zero

6. The angle of deflection of jet is equal to [B]

A) 180 +β B) 180 - β C) 90 +β D) 90 -β

7. Mass of water striking per second [A]

A) density x Area x Velocity of jet B) density x velocity of jet C) presure x density x area D) Weigt of plate

8. The mass of fluid striking the plate per second is [A]

A) density x discharge B) density x velocity of jet C) density x pressure D) density x kinetic energy

9. The workdone by the jet per second will be output of the jet [A]

A) output of the jet = F x U (i.e. Force x velocity) B) output of the jet = F x P (i.e. Force x Pressure) C) output of the jet = A x P i.e. (Area x Pressure) D) output of the jet = P x V (i.e. Pressure x Velocity)

10. The force exerted by a jet on a moving curved vane is ---------that on a moving flat plate [A]

A) Greater than B) less than C) equal to D) euqal to zero

11. Efficiency of the wheel is ratio of [B]

A) workdone per second to the potential energy of jet per second B) workdone per second to kinetic energy of jet per second C) workdone to load D) workdone to velocity

12. In radial flow distance from the axis of rotation is [A]

A) continuously changing B) remain same C) become equal to zero D) become less than zero

13. In a tangential flow the distance f a fluid particles from the the axis of rotation [A]

A) remain same B) continuously change C) equal to zero D) become less than zero

14. For a radial curve vane radius of the vane at inlet and outlet is [B]

A) same B) different C) no role of radius D) depend on angle of jet

15. For radial curved vane tangential velocity will be equall because [B]

A) inlet and outlet radius of curve vane are same B) inlet and outlet radius of curve vane are different C) No role of radius D) inlet tadius is twice the outlet radius of curve vane

16. Workdone per second on the wheel [A]

A) Torque x angular velocity B) torque x area C) Torque x time D) Torque x force

17. Coefficient of velocity is [A]

A) ratio of actual velocity to theoretical velocity B) actual velocity x theoretical velocity C) only actual velcocity D) ratio of theoretical to actual velocity

18. The following is a rotodynamic pump [D]

A) Gear Pump B) Plunger Pump C) Two-throw pump D) Volute pump

19. Identify the positive displacement pump from the following [B]

A) multi-stage pump B) screw pump C) turbine pump D) Volute pump

20. The following is a rotary pump [C]

A) double acting pump B) axial flow pump C) radial piston D) treble ram pump

21. A centrifugal pump [C]

A) is a positive displacement pump B) utilise the hydraulic energy of the fluid C) increase the energy of the fluid D) is a turbo-machine whose action is the reverse of an impulse

22. The voulte casting of a centrifugal pump [B]

A) prevents clogging of impeller with suspended matter B) converts kinetic energy of fluid leaving the impeller into pressure C) improves the performance by creating a free vortex D) minimise the build-up of dangerously high pressure

23. A turbine pump is provided with guide vanes to [A]

A) increase the pressure generation B) prevent vortex stick by suspended matter C) guide the flow smoothly into the impeller D) convert high pressure into high kinetci energy

24. A turbine pump is a special type of centrifugal pump which [D]

A) can generate power like turbine when required B) has propeller blades similar toa Kaplan turbine C) contains a vortex chamber to increase the pump turbine D) contains guide vanes to improve pressure generation

25. When the direction of rotation is reversed the following turbine can pump up the water [C]

A) Girard turbine B) Kaplan turbine C) Pump turbine D) turbine pump

26. A two stage centrifugal pump compared to a single stage centrifugal pump of the same size [A]

A) develop twice the head ,Q being the same B) develop $\sqrt{2}$ times the head, Qbeing constant C) gives twice the discharge, head being the same D) gives half the discharge, increasing the head

27. For pumping paper pulp and sewage water the most suitable centrifugal impeller is [D]

A) double suction type B) shrouded type C) open type D) semi-open type

28. The type of centrifugal impeller best suited for pumping small quantities against high heads is [B]

A) axial flow type B) radial flow type C) mixed flow type D) tangential flow type

29. The centrifugal pump impeller best suited for pumping large quantities against small head is [D]

A) multi-stage type B) semi-open type C) Vane type D) axial flow type

30. The centrifugal impeller that automatically eliminates the end thrust on the shaft is [A]

A) double suction type B) multi-stage type C) axial flow type D) radial flow type

31. A double suction type centrifugal pump [A]

A) is similar in operation to a two-stage pump B) is primarily a high head pump C) eliminates end thrust on the shaft D) does not need a gland packing on the suction side

32. The approximate specific speed of a radial flow type pump is [A]

A) 1500 B) 3000 C) 5000 D) 7500

33. The most probable value of specific speed of an axial flow type of pump is [B]

A) 16000 B) 8000 C) 4000 D) 2000

34. The manometric head of a centrifugal pump is [D]

A) (U1-U2)/4g B) (U1-U2)/3g C) Vw1U1/2g D) Vw1U1/g

35. The manometric head of a centrifugal pump is ? [B]

A) sum of centrifugal head and pipe losses B) additional head imparted to the fluid by the impeller C) actual lift of pump less pump losses D) level difference through which the pump lifts the liquid

36. The numerical sum of suction and delivery pressure gauges readings in a centrifugal pump setup is equal to the [C]

A) actual head B) static head C) manometric head D) centrifugal head

37. In a centrifugal pump the following is classified as a mechanical loss [D]

A) shock loss at vane exit B) friction loss in impeller passages C) friction loss in diffusers D) friction loss in glands and bearing

38. The ratio of power delivered to the fluid to the shaft input power is called [C]

A) manometric efficiency B) hydraulic efficiency C) mechanical efficiency D) overall efficiency

39. The manometric efficiency of a centrifugal pump is the ratio of [A]

A) fluid power of pump to the impeller power B) power of impleere to shaft power C) fluid power of pump to the shaft power D) power of impeller to fluid power of pump

40. The ratio of power given to the fluid by the pump to shaft is called [C]

A) manometric efficiency B) hydraullic efficiency C) overall efficiency D) mechanical efficiency

41. The specific speed of a centrifugal pump is defined as the speed of a pump of such a size that it [A]

A) delivers unit discharge under unit head B) requires unit power to develop unit head C) requires unit power to deliver unit discharge D) develops unit head whatever be the discharge

42. The rotational speed of a centrifugal pump varies as [B]

A) squre of manometeric head B) square root of manometric head C) square of impeller diameter D) inverse square root of impeller diameter

43. The height at which a centrifugal pump can be set above the lower liquid surface [D]

A) can be any height less than the manometric head B) depends on the efficiency of foot valve C) is a function of exit vane valve D) is a function of saturation vapour pressure of liquid

44. The NPSH of a centrifugal pump [A]

A) depends on hs B) independent of hs C) equal to hs D) hs-ρg

45. The NPSH of a centrifugal pump is equal to [D]

A) σhs B) Pvap /w C) σ/Hm D) σHm

46. When the speed of centrifugal pump is constant [B]

A) shaft power decrease with increase of Q B) Hm decreases with increases of Q C) Q increase with increase of Hm D) Q is independent of Hm

47. When a steady jet impinges on a fixed inclined plate [A]

A) The flow is divided into parts proportional to the angle of inclination of the plate B) No force is exerted by the jet on the plate C) The momentum component is unchanged parallel to the surface D) Force at same velocity

48. The losses that occur in a centrifugal pump are high when the discharge is [C]

A) high B) low C) high and low D) No losses

49. For a centrifugal pump [D]

A) Hm increases as Q, N being constant B) Hmdecreases as Q, N being constant C) Q is independent of shaft power, N being constant D) Q increase as N,Hm being constant

50. The operating characteristic of a centrifugal pump are plotted on a base of [B]

A) Hm ,N being constant B) Q,N being constant C) Shaft input Q being constant D) N,Hm being constant

51. A centrifugal pump fails to lift the liquid if [A]

A) Centrifugal head is less than Hm B) excessive shock losses occur at exit of impeller C) delivery pipe is leaky D) shaft alignment is defective

52. In general the vanes of a centrifugal pump are [B]

A) curved forward B) curved backward C) radial D) twisted

53. An impeller with backward curved vanes [C]

A) is easier to fabricate B) can not run at speech other than design speed C) has a falling head discharge characteristic D) has greater absolute velocity at outlet than that with forward curved vanes

54. A fast centrifugal pump impeller will have [C]

A) forward facing blades B) radial blades C) backward facing blades D) propellor type blade

55. In a centrifugal pump, the inlet angle will be designed to have [B]

A) relative velocity vector in the radial direction B) absolute velocity vector in the radial direction C) velocity of flow to be zero D) peripheral velocity to be zero

56. The flow in the volute casing outside the rotating impeller of a centyrifugal pump is [C]

A) radial flow B) axial flow C) free vortex flow D) forced vortex flow

57. Centrifugal pumps dealing with muds have an impeller of the type [A]

A) open B) double suction C) one-side shrouded D) two-side shrouded

58. The specific speed of pump of a pump is defined as the speed of unit of such a size that it [C]

A) requires unit power to develop unit head B) delivers unit discharge at unit power C) delivers unit discharge at unit head D) produces unit power with unit head available

59. A brake nozzle serves to quickly stop the runner of the folowing turbine when the water supply is shut-off [D]

A) Francis B) Propeller C) Kaplan D) Pelton

60. In the following type of turbine waterenters the runner radially and leaves axially [D]

A) Pelton B) Propellor C) Kaplan D) Francis

61. Francis turbine is reaction a reaction turbine of the following type [B]

A) outward flow type B) inward flow type C) tangential flow type D) axial flow type

62. Kaplan turbine is a reaction turbine of the following type [B]

A) axial flow type B) radial flow type C) mixed flow type D) tangential flow type

63. The most probable value of the speed ratio of a Francis turbine is [B]

A) 0.45 B) 0.8 C) 1.6 D) 2.2

64. The most probabale value of the speed ratio of a kaplan Turbine is [D]

A) 0.45 B) 0.75 C) 1.15 D) 2

65. The function of the scroll case of a reaction turbine is to [C]

A) guide the water to the runner at appropriate angle B) guide the water smoothly to the tailrace C) distribute the water evenly around the wheel D) reduce the eddy and shock losses

66. The primary function of wicket gates in reaction turbine installation is to [B]

A) avoid water hammer by diverting the water from runner B) control the direction and quantity of water entering then runner C) maintain nagative pressure at turbine exit D) reduce whirling of water at the runner entrance

67. The draft tube of reaction turbine serves the purpose of [A]

A) increasing the effective head on the turbine
B) reducing cavitation damage to the turbine
C) increasing the kinetic energy of water leaving the runner
D) uniformly supplying water to the runner vanes

68. The runner blades of a kaplan turbine are [D]

A) curved than propeller blades
B) more curved than pelton blades
C) more curved than Francis blades
D) less curved than Francis blades

69. The runner blades of a kaplan turbine are adjustable. This facility [A]

A) improves the part load efficiency
B) improves the full load efficiency
C) give a wide range of operating speeds
D) simplifies the governing mechanism

70. The speed ratio of hydraullic turbine is the ratio of [B]

A) velocity head of jet to net head
B) tangential velocity of wheel to theoretical jet velocity
C) tangential velocity of wheel to net head
D) velocity of whirl at exit to net head

71. The speed ratio of hydraulic turbine is proportional to [C]

A) 1/D
B) N
C) $1/\sqrt{H}$
D) H

72. The flow ratio of a raction turbine is the ratio of [D]

A) velocity of flow to theoretical jet velocity
B) velocity of flow to net head
C) velocity of wheel at inlet to velocity of flow
D) velocity of flow to theoretical jat velocity

73. When there is a sudden fall of load on a reaction turbine the immediate action of the governor would be to [C]

A) move the deflector to intercepr the jet
B) move the needle valve rapidly
C) open the pressure inclination suitably
D) adjust the wicket gate inclination suitably

74. Cavitation in a hydraulic turbo-machine is caused by [A]

A) low velocity
B) low pressure
C) local pockets of excessive pressure
D) regions of low barometric pressure

75. The critical Thoma's cavitation number of a turbine is function of [A]

A) Specific speed
B) head
C) vapour pressure of water
D) turbine exit pressure

76. The critical Thoma index of a water turbine [C]

A) increase with height of turbine above TWL
B) decrease with saturation vapour pressure of water
C) increase with specific speed
D) decrease with net head on turbine

77. For part load operation over long periods of times the following type of turbine is the worst choice [D]

A) Pelton B) Francis C) Kaplan D) Propellor

78. If N is the normal running speed of aKaplan turbine the probable value of its runaway speed is [D]

A) 1.2N B) 1.5N C) 1.8N D) 2.5N

79. The ratio of boss diameter to runner diameter of Kaplan turbine is [C]

A) 0.15 B) 0.25 C) 0.35 D) 0.45

80. Two hydraulic turbines are said to be dynamically similar when they are geomterically similar and have [C]

A) similar stream lines B) same cavitation index C) same efficinency D) same Reynolds number

81. For a reaction turbine model to be geometrically similar to the prototype the following parameters of the model and prototype should be equal [B]

A) jet ratios B) flow ratios C) unit speeds D) unit power

82. A 1:10 reduce scale model of a reaction turbine runs at the same speed as the prototype machine.The ratio of prototypes to model discharge should be [A]

A) 1000 B) 100 C) 10 D) 500

83. The jat ratio of a pelton wheel is 14. For a 1:10 reduce scale model of the wheel, the condition of dynamic similarities demands that tha jet ratio of the model be [B]

A) 1.4 B) 14 C) 20 D) 50

84. The diameter of a turbine runner varies as [D]

A) square of power for the given head B) square of discharge for the given speed C) square root of speed for the given head D) square root of head for the given speed

85. For maximum efficiency of a series of flat plates,the speed of plates is [C]

A) Equal to jet speed B) 3/4 of jet spped C) 1/2 of the jet speed D) 1/3 of the jet speed

86. Maximum efficiency of a series of vertical plate is [C]

A) 0.6667 B) 0.3333 C) 0.5 D) 0.8

87. The unit of power of a hydraulic turbine is defined as the power developed by the turbine [B]

A) running at unit speed B) working under unit head C) when it consume unit discharge D) when it geometrically similar to the specific turbine

88. The specific speed of hydraullic turbine is defined as the speed of such a turbine that [C]

A) it consumes unit discharge under unit head B) it consume unit discharge to develop one metric H.P C) it develop one metric H.P. under unit head D) it runs at unit speed under unit head

89. The specific speed of hydraulic turbine is [B]

A) NuPu B) Nu/√P C) NP D) NHP

90. Governing of turbine means [B]

A) the head is kept constant under all conditions of working B) the speed is kept constant under all conditions C) the discharge is kept constant under all conditions D) Time is kept constant under all conditions

91. The surge tank in a pipe line is used to [C]

A) Reduce the loss of head due to friction in pipe B) Make the flow uniform in pipe C) Relieve the pressure due to to water hammer D) Reduce potential energy

92. The maximum efficiency of a medium to high specific speed Francis turbine of large size is approximately equal to [C]

A) 0.83 B) 0.88 C) 0.93 D) 0.98

93. With increase of wheel speed keeping the head constant the discharge of a [A]

A) Francis turbine remain constant B) Francis turbine shows an increasing trend C) Pelton wheel shows an increasing trend D) Pelton wheel remain constant

94. The operating characteristic of a hydraulic turbine are graphs of [D]

A) unit power against unit speed, head being constant B) unit discharge against unit speed,head being constant C) efficiency against percent full load,discharge being constant D) efficiency against percent full load,speed and head being constant

95. A multiple jet Pelton wheel is suitable for the following specific speed [B]

A) 25 B) 50 C) 125 D) 250

96. A water turbine with the specific speed is more likely to be subjected to cavitation effect than others [D]

A) 10 B) 50 C) 100 D) 500

97. The most appropriate turbine for a specific speed of 110 is of the following type [C]

A) slow francis B) Fast Francis C) Medium Francis D) Multiple-jet Pelton

98. If the net head on a turbine is the range of 150 to 350m the choice of a turbine is made as follows [C]

A) only a Pelton wheel B) only a Francis turbine C) Pelton wheel or Francis turbine depending on Ns D) Francis or Kaplan turbine depending on Ns

99. An impulse turbine [D]

A) is most suited for low head installation B) always operates submerged C) makes use of draft tube D) operate with initial complete conversion of pressure head to velocity head

100. A pelton wheel [B]

A) gives optimum efficiency at run away speed B) operate by converting the available energyfully into kinetic energy before entering the runner C) the water leaving the runner has subatmospheric pressure D) is kept entirely submerged in water below the tail race

101. A pelton wheel is idealy suited for [A]

A) high head and low discharge B) high head and high discharge C) low head and low discharge D) medium head and medium discharge

102. The net available head in a Pelton turbine turbine installation is the [A]

A) head at the elevation of the nozzle B) difference in elevation between the forebay water and the nozzle outlet C) difference in elevation between the forebay water level and the tail race water level D) kinetic energy of the jet issuing from the nozzle

103. The jet ratio of Pelton wheel lies between [C]

A) 3 to 5 B) 6 to 10 C) 11 to 14 D) 20 to 25

104. The speed factor in a turbine represents the ratio between [A]

A) peripheral velocity of vane and spouting velocity B) whirl velocity and peripheral velocity C) flow velocity and spouting velocity D) absolute velocity and spouting velocity

105. The speed factor (speed ratio) of aPelton turbine for its efficient operation lies in the range [A]

A) 0.43-0.47 B) 0.8-0.9 C) 0.96-0.98 D) 1.2-1.4

106. The therotical maximum efficiency of Pelton turbine is [A]

A) 1/2 (1+cosβ2) B) ½ (1+cos3β2) C) ½ (1-cos4β2) D) ½ (1+sin2β2)

107. A split bucket is used in Pelton wheel to [B]

A) provide a spherical shape to the surface of spoon B) minimise the axial thrust on the bearings supporting the wheel shaft C) avoid the possibility of erosion from impurities present in the jet striking the buckets D) prevent disturbance to incoming bucket from the deflected jet

108. Regulation of a Pelton turbine is done by changing [B]

A) the head available at the nozzle B) the annular area of the nozzle C) the velocity of flow from the nozzle D) the length of the nozzle

109. In a reaction turbine [B]

A) flow can be regulated without loss B) there is only partial conversion of available head to velocity head before entry to runner C) the outlet must be above the tail race D) water may be allowed to enter a part or whole of wheel circumference

110. Indicate the worng statement with respect to reaction water turbine [A]

A) the water leaves the turbine at atmospheric pressure B) the guide vanes direct the flow at proper angle C) the spiral casing serves to uniformly distribute water into guide blades D) the draft tube allow setting of turbine above tail race with minimum reduction in available energy

111. Which of the following forms of draft tube will not improves the hydraulic efficiency of the turbine [A]

A) straight cylindrical B) conical type C) Bell-mounted D) Bent tube

112. The movable wickets gatesof a reaction turbin are used to [B]

A) control the flow of water passing throuhg the turbine B) control the pressure undewr which the turbine is working C) strengthen the casing of the turbine D) reduce the size of the turbine

113. The installation of a draft tube in a reaction turbine helps to [D]

A) increase the flow rate B) prevent air from entering C) transport water to downstream without eddies D) convert the kinetic energy to pressure head

114. Comparted to cylindrical draft tube a tappered draft tube [C]

A) prevents hammer blow and surges B) responds better to load fluctuation C) convert more kinetci head into pressure head D) prevents cavitation even under reduced discharge

115. In a francis turbine maximum efficiency is obtained when [B]

A) relative velocity is radial at the outlet B) absolute velocity is radial at the outlet C) velocity of flow is constant D) guide vane angle is 90 degree

116. In a practice the flow ratio of a Francis turbine is found to lie in the range [A]

A) 0.15 to 0.3 B) 0.42 to 0.46 C) 0.55 to 0.65 D) 0.7 to 0.85

117. The modern francis turbine is essentially [B]

A) A tangential flow turbine B) A mixed flow turbine C) A axial flow turbine D) A radial flow turbine

118. Kaplan turbine is [B]

A) a high head mixed flow turbine B) a low head axial flow turbine C) an outward flow reaction turbine D) an impulse in ward flow turbine

119. A kaplan turbine balde is suitable for [B]

A) low head and low discharge B) low head and high discharge C) high head and low discharge D) high head and high discharge

120. An adjustable propellor turbine is called [C]

A) Pelton turbine B) Banki Turbine C) Kaplan turbine D) Francis -Pelton turbine

121. The runner vanes of a reaction turbine are made adjustable as in a Kaplan turbine to [C]

A) Reduce the wear and tear of the runner B) allow running at different speeds of rotation C) operate the machine at optimum efficiency at part load conditions D) permit the machine to operate under varying condition of pressureand discharge

122. Which amongst the following is false with respect to Kaplan turbine [D]

A) it has blades of small camber to prevent separation B) it employes large guide vane angle than those in a Francis turbine C) it can adjust both guide vane and blade according to rate of discahrge D) it is designed for flow velocity of the mixed flow tpye

123. The value of speed ratio for a kaplan turbine is about [C]

A) 0.5 B) 0.9 C) 1.5 D) 2

124. Usually the ratio of hub-diameter to the ouside diameter of the runner of a Kaplan is between [B]

A) 0.15 to 0.3 B) 0.4 to 0.6 C) 0.7 to 0.85 D) 0.1 to 0.2

125. Run away speed of a hydraulic turbine is the speed [D]

A) corresponding to maximum overload permissible B) at full load C) at which there would be no damage to the turbine runner D) at which the turbine runer can be allowed to run freely without load and with wicket gates wide open

126. Critical speed of turbine is [C]

A) same as a run away speed B) speed at which natural frequency of a vibration equal the number of revolution in the same time C) speed that will cause mechanical failure of the shaft D) speed equal to synchronous speed of the generator

127. Specific speed of a turbomachine [B]

A) is the speed of a machinehaving unit dimension B) relates the shape rather than size of the machine C) remains the same under different condition of operation D) depends only upon the head under which the machine operates

128. The specific speed of turbine is defined as the speed of a member of the same homologous series of such a size that it [D]

A) dekivers unit dischargeat unit head B) delivers unit discharge at unit power C) deliovers unit power at unit discharge D) produce unit power under a unit head

129. Francis turbine is [D]

A) An impulse turbine B) A radial flow impulse turbine C) An axial flow turbine D) A reaction radial flow turbine

130. A kaplan turbine is [C]

A) An impulse turbine B) A radial flow impulse turbine C) An axial flow reaction turbine D) A radial flow reaction turbine

131. The specific speed of an impulse turbine(Pelton wheel) range from [A]

A) 5 to 10 B) 10 to 50 C) 60 to 300 D) 360 to 700

132. Francis turbine are available in the following range of specific speed [B]

A) 8 to 30 B) 50 to 250 C) 150 to 500 D) 300 to 900

133. High specific speed (300 to 1000) and low head (below 30 m) indicates that the turbine is [C]

A) Pelton wheel B) Francis C) Kaplan D) Propellor

134. Francis,Kaplan and Propellor turbines fall under the category of [B]

A) Impulse turbine B) Reaction turbine C) Implse-reaction combined D) axial flow

135. The degree of reaction of a kaplan turbine is [C]

A) equal to zero B) greater than zero but less than 0.5 C) greater than 0.5 but less than 1 D) equal to 1

136. Mark the False statement [D]

A) For a Pelton wheel ,degree of reaction R=0 B) For Francis turbine $0 < R < 1$ C) For Kapline turbibe $0.5 < R < 1$ D) the specific speed decrease if the decrease of reaction in a turbine is increased

137. The energy conversion process in the outward radial flow turbine is [C]

A) purely by impulse only B) purely by reaction only C) may be impulse or reaction D) partly by impulse and partly by reaction

138. A surge tank is provided to protect the [D]

A) Turbine runner B) spiral casing C) draft tube D) Penstock

139. Which one of following turbine is used in underwater power stations ? [C]

A) Pelton turbine B) Deriaz turbine C) Tubular turbine D) Turgo-impulse turbine

140. For a given centrifugal pump [B]

A) head varies inversely as square of speed B) discharge varies directly as speed C) discharge varies directly as square of speed D) power varies directly as fifth power of speed

141. If the diameter of a centrifugal pump impeller is double but the discharge is to remain same, then the head to be reduced by [B]

A) 2 units B) 4 times C) 8 times D) 16 times

142. If requirements of NPSH are not satisfied for a given pump then [D]

A) no flow will take place B) pump will have low efficiency C) pump will not develop head D) pump will get cavitated

143. Cavitation in centrifugal pump can be reduced by [B]

A) reducing the discharge B) reducing the suction head C) throttling the discharge D) Increase the flow velocity

144. Series operation of a centrifugal pump results in [A]

A) high speed B) low speed operation C) higher discharge D) reduced power consumption

145. A given centrifugal pump is atated to take much of power. This may be attribute to [B]

A) air leakage B) heavy liquid being pumped C) the pump being run at low speed D) the strainer and foot valve arrangement being not effective

146. When starting a centrifugal pump ,the delivery valve is kept [B]

A) fully open B) fully closed C) half open D) less than half open

147. What will happen to the pressure of liquid inside a centrifugal pump which is made to run with delivery valve kept fully closed [B]

A) becomes zero B) remain constant C) falls D) rises

148. A device with which small quantities of water can be pumped to higher levels from the available large quantity of water of low head [C]

A) Hydraulic accumulator B) Hydraulic Intensifier C) Hydraulic ram D) Air lift pump

149. Reciprocating pump are best suited [C]

A) where operating speeds are much high B) for pumping oil in hydraulic devices C) where constant supplies are required regarrdless of pressure flctuation D) where constant heads are required despite fluctuation in discharge

150. The slip in case of reciprocating pump is [C]

A) positive B) negative C) Positive or Negative D) Zero

151. The pressure at which seperation takes place is known as seperation pressure. For water the limiting value of seperation pressure head is ------absolute [A]

A) 2.5 m B) 7.5 m C) 10.3 m D) 13.3 m

152. Air vessel is used in a reciprocating pump to obtain [C]

A) reduction of suction head B) rise in delivery head C) continuous supply of water at uniform state D) increase in supply of water

153. Air vessel in a reciprocating pump are used to [C]

A) increase the pump need B) increase the pump effeciency C) reduce accelerating heads to minimum D) smothen the flow

154. The term fluidics relates to the combination of the two function namely [A]

A) fluid amplification and fluid logic B) fluid mechanicsand hydraulic C) Pneumatics and hydraulic D) hydraulic and electrical power

155. The fluidics device are [B]

A) active device B) Passive device C) electrical device D) power device

156. Fluidic amplifiers are used to amplify [D]

A) The power B) Heat C) Temperature D) amplification to the fluid signals

157. A device which increase the intensity of pressureof a given liquid with the help of pressure liquid of large quantity called [D]

A) Hydraulic press B) Hydraulic crane C) Hydraulic accumulator D) Hydraulic intensifier

158. Which of the following devices is used to store energy of liquid under pressure and makes this energy available to hydraulic energy [B]

A) Hydraulic coupling B) Hydraulic accumulator C) Hydraulic ram D) Hydraulic press

159. A device which is employed for transmission of power from one shaft to another through a liquid medium called [C]

A) Hydraulic intensifier B) Hydraulic torque convertor C) Hydraulic coupling D) Hydraulic press

160. Which of the following devices is used for transmiting increased or decreased torque from one shaft to another [D]

A) Hydraulic ram B) Hydraulic coupling C) Hydraulic intensifier D) Hydraulic Torque convertor