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Subject Name & Code : Fluid Mechanics & Hydraulic Machines (23PCME404)   Exam Name : Q1

1. The branch of Engineering science which deals with water at rest or in motion is called   [A]

   A) Hydraullic
   B) Fluid mechanics
   C) Applied Mechanics
   D) Kinematics

2. A substance is considered to be a fluid when it   [D]

   A) expands unitl it fils any container
   B) is practically incompressible
   C) cannot be subjected to any shear force
   D) cannot remain at rest ubder the action of shear force

3. possesses no definite volume and is compressible   [C]

   A) Solid
   B) Liquid
   C) Gas
   D) Vapour

4. A real practical fluid possesses which of the following   [C]

   A) Viscosity
   B) Surface Tension
   C) Compressibility
   D) Density

5. The ratio of the specific weight of the liquid to the specific weight of a standard fluid is know as   [C]

   A) Specific Volume
   B) Wight density
   C) Specific gravity
   D) Viscosity

6. The property of a fliud which determine its resistance to shear stress is called   [A]

   A) Viscosity
   B) Surface Tension
   C) Compressibility
   D) Tension

7. A fluid is called an ideal fluid if it   [C]

   A) obeys Newton's law of viscosity
   B) has very small viscosity like air
   C) moves without rotation
   D) is incompressible

8. Fluid which do not follow the linear relationship between shear stress and rate of deformation are termedas ---fluid   [B]

   A) Newtonian
   B) Non-Newtonian
   C) Dilatent
   D) ideal

9. The printer's ink is an example   [C]

A) Nontonian fluid   B) Non-Newtonian   C) Thyxotropic substance   D) Elastic solid

10. The viscosity of liquid ----withincrease in temperature   [A]

A) decrease   B) Increase   C) First decrease then increase   D) First increase and then decrease

11. The specific volume of a fluid is the reciporcal of   [A]

A) density   B) relative density   C) specific weight   D) specific gravity

12. Floating is easier in a liquid of   [A]

A) higher density   B) higher viscosity   C) greater surface tension   D) surface tension

13. Surface tension is expressed in   [A]

A) N/m   B) N   C) kg   D) cm

14. Pressure inside a water droplet is given by the relation   [A]

A) $P= 4\sigma/d$ B) $P= 3\sigma/d$ C) $P= 8\sigma/d$ D) $P=16\sigma/d$

15. Is a phenomenon by which a liquid rise into a thin glass tube above or below its general level ?   [B]

A) Surface tenssion   B) Capillarity   C) Cohesion   D) adhesion

16. The capillary rise of water in the glass tube is given by   [C]

A) $h= 2\sigma/wd$ B) $h= 3\sigma/wd$ C) $h= 4\sigma/wd$ D) $h= 6\sigma/wd$

17. Elasticity of fluids is measured in terms of   [C]

A) Young's modulus of elasticity   B) Shear modulus of elasticity   C) bulk modulusof elasticity   D) shear stress

18. Compressibility is the reciprocal of   [A]

A) bulk modulus of elasticity   B) Shear modulus of elasticity   C) Youngs moduls of elasticity   D) shear stress

19. Bulk modulus of elasticity is the ratio of   [C]

A) Tensile stress to tensile strain   B) Compressive stress to compressive strain   C) compressive stress to volumetric strain   D) stress to strain

20. The value of bulk modulus of elasticity with increase pressure   [A]

A) Increase   B) Decrease   C) Equal   D) Not equal

21. The force per unit area is called   [A]

A) Pressure   B) strain   C) Surface Tension   D) Shear strain

22. The presure of aliquid ona surface will always act --to the surface   [B]

A) Parallel   B) Normal   C) 45 Degree   D) 60 Degree

23. The pressure--as the depth of theliquid increase   [A]

A) Increase   B) Decrease   C) remain unchnage   D) Equal

24. The intensity of pressure in a liquid due to it's depth will vary---with depth   [A]

A) directly   B) Indirectly   C) same   D) Equal

25. The height of the free surface above any point is known as   [A]

A) static head   B) intensity of pressure   C) Datum   D) Static pressure

26. The intensity of pressure at any point in a liquid at rest is the same in all directions   [B]

A) Kirchoff's law   B) Pascal's law   C) Stefan law   D) conservation law

27. Any pressure measured above the absolute zero of pressureis termed as   [A]

A) atmosopheric pressure   B) High-pressure   C) absolute vacuum pressure   D) vacuumu pressure

28. The fundamental S.I. Unit of pressure is Newton/ meter square this is also known as   [A]

A) Pascal   B) Stoke   C) Poise   D) stroke

29. The device used for measuring the pressureat a point in a fluid by balancing the column fluid by the same or another column of liquid are know as   [B]

A) Mechanical gauge   B) Manometers   C) Gauge   D) Gaugemeter

30. The simplest form of manometer which can be used for measuring moderate pressure of liquid is   [A]

A) Piezometer   B) Differential manomater   C) U-Tube manometer   D) Air-meter

31. Piezometer measure ---pressure only   [B]

A) absoule   B) gauge   C) atmosopheric   D) vacuumu

32. A piezometer tube is not suitable for measuring ---pressure   [B]

A) Positive   B) negative   C) atmosopheric   D) vacuum

33. Inclined single column manometer is used for the measurement of---pressure   [A]

A) small   B) medium   C) zero   D) high

34. Which of the following is used to measure the difference in pressure between two points in a pipe or in two different pipe ?   [C]

A) Piezometer   B) Single column manometer   C) Differential Manometer   D) U-Tube manometer

35. The manometers are suitable for comparatively ---pressure   [A]

A) Low   B) High-   C) Very high   D) Zero

36. A bourdon tubes are generally made of   [D]

A) Copper   B) tin   C) mild steel   D) Bronze or nickle steel

37. Which of the following is an advantage of manometer ?   [B]

A) Low accuracy   B) High sensitivity   C) High maintenance   D) High cost

38. The intensity o fpressure p is related to specific weight w of the liquid and vertical depth h of the point by the equation   [A]

A) p=wh   B) h=pw   C) p=QA   D) P=QP

39. The point of application of the total pressure on the surface is   [B]

A) centroid of thesurface   B) centre of pressure   C) edge of the surface   D) side of the surface

40. If A is the area of the immersedw is thespecific weight of the liquid and x is the depthe of horizontal surface from theliquid surface then total   [C]
pressure on surface

A) p=vX   B) p=Ax   C) p=wAx   D) p=wA

41. The viscosity of Gases   [B]

A) Increase with decrease in temperature   B) Increase with increase in temperature   C) is independent of temperature   D) increase upto critical temperature

42. The side of the dam to which the water from the river or the stream approaches is known as   [B]

A) Downstream   B) Upstream   C) Rightstream   D) Leftstream

43. Lock gates are provided to   [A]

A) change the water level in a canal or river   B) store water for irrigation purpose   C) store the water only   D) To make another canal
   for irrigation

44. From Newton's equation of viscosity it can be inferred that high viscosity fluids   [C]

A) always produce high shear stress   B) always producelow shear stress   C) can give rise to zero shear stress   D) are associated with high velocity
                                                                                                       gradients

45. The term ----means the study of pressure exerted by a fluid at rest   [A]

A) Hydrostatic   B) Fluid mechanics   C) Continuum   D) Kinetics

46. The tendancy for an immersed body to be lifted up in the fluid to an upward force opposite to the action of gravity is known as   [A]

A) Buoyancy   B) Centre of buoyancy   C) buoyant force   D) Buoyant pressure

47. The magnitude of the buoyant force can be determined by   [B]

A) Newton's second law of motion   B) Archimede's principle   C) Principle of moments   D) Kirchoff's moments

48. When a body is immersed in a fluid partially or completely the force of buoyancy is equal to   [B]

A) The weight of the body   B) the weight of the fluid displaced by the   C) the weight of the volume of the fluid   D) mass of the body
                                    body   equal to the volume of body

49. The point of application of the force of buoyancy on the body is known as   [B]

A) centre of gravity   B) centre of buoyancy   C) metacentre   D) mass centre

50. When a body is immersed in a fluid wither wholly or partially it is buoyed it is buoyed or lifted up by a force which is equal to weight of fluid   [A]
displaced by body-by

   A) Archmedes Principle   B) Newton Principle   C) Pascal Principle   D) Kirchhoff principle

51. A floating body is in stable equillibrium when   [B]

   A) the metacentre is below its centre of   B) The metacentre is above its centre of   C) the metacentre height is zero   D) its centre of gravity is below the
       gravity   gravity   centre of buoyancy

52. An ice-cube is floating in glass of water.As the cube melts the water level   [B]

   A) Remains constant   B) falls   C) Rises   D) Zero level

53. If the position of metacentre M remains lower than c.g. of the body G, the body will remain in a state of   [B]

   A) Stable equillibrium   B) Unstable unequillibrium   C) neutral equillibrium   D) Neutral zero

54. Which one is in a state of failure?   [D]

   A) Solid   B) Liquid   C) Gas   D) Fluid

55. small shear force is applied on an element and then removed. If the element regains it's original position, what kind of an element can it be?   [A]

   A) Solid   B) Liquid   C) Fluid   D) Gaseous

56. In which type of matter, one won't find a free surface?   [C]

   A) Solid   B) Liquid   C) Gas   D) Fluid

57. If a person studies about a fluid which is at rest, what will you call his domain of study?   [B]

   A) Fluid Mechanics   B) Fluid Statics   C) Fluid Kinematics   D) Fluid Dynamics

58. The value of the compressibility of an ideal fluid is   [A]

   A) zero   B) unity   C) infinity   D) more than that of a real fluid

59. The value of the Bulk Modulus of an ideal fluid is   [C]

   A) zero   B) unity   C) infinity   D) less than that of a real fluid

60. The value of the viscosity of an ideal fluid is　　　　　　　　　　　　　　　　　　　[A]

A) zero

B) unity

C) infinity

D) more than that of a real fluid

61. The value of the surface tension of an ideal fluid is　　　　　　　　　　　　　　　[A]

A) zero

B) unity

C) infinity

D) more than that of a real fluid

62. A piezometer opening in pipes measures　　　　　　　　　　　　　　　　　　　　[C]

A) Velocity head

B) Total pressure

C) Static pressure

D) Zero pressure

63. Hydrostatic pressure on a dam depends upon its　　　　　　　　　　　　　　　　[D]

A) Depth

B) Shape

C) Length

D) Both Depth & Shape

64. The flow takes .... in one dimensional flow.　　　　　　　　　　　　　　　[B]

A) Place in curve

B) Place in straight line

C) Place in one direction

D) Place in two direction

65. If the surface of liquid is convex, means　　　　　　　　　　　　　　　　　　　　[B]

A) Cohesion pressure is negligible

B) Cohesion pressure is increased

C) Cohesion pressure is decreased

D) Cohesion pressure is zero

66. What is the weight per unit volume of a liquid at standard temperature and pressure?　　[C]

A) Mass density

B) Specific gravity

C) Specific weight

D) Special weight

67. An ideal fluid is defined as the fluid which　　　　　　　　　　　　　　　　　　　[C]

A) is compressible

B) is incompressible

C) is incompressible and non-viscous (inviscid)

D) has negligible surface tension

68. Newton's law of viscosity state that　　　　　　　　　　　　　　　　　　　　　　[B]

A) shear stress is directly proportional to the velocity

B) shear stress is directly proportional to velocity gradients

C) shear stress is directly proportional to shear strain

D) shear stress is directly proportional to the viscosity

69. A Newtonian fluid is defined as the fluid which　　　　　　　　　　　　　　　　　[B]

A) is incompressible and non-viscous

B) obey Newton's law of viscosity

C) is highly viscous

D) is compressible and non-viscous

70. Kinematics viscosity is defined as equal to　　　　　　　　　　　　　　　　　　　　　[B]

A) dynamic viscosity X density　　B) dynamic viscosity/ density　　C) dynamic viscosity X pressure　　D) Pressure X density

71. Newton's law of viscosity is a relation that gives the shear stress in terms of　　　　　[B]

A) pressure and viscosity　　B) pressure and velocity gradients　　C) viscosity　　D) dynamic viscosity

72. Poise is the unit of　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　[C]

A) Mass density　　B) kinematic viscosity　　C) viscosity　　D) velocity gradient

73. For a floating body the buoyant force passes through the　　　　　　　　　　　　　[D]

A) centre gravity of the body　　B) centre of gravity of the submerged part of the body　　C) metacentre of the body　　D) centroid of the liquid displaced by the body

74. The condition of the stable equillibrium for a floating body is　　　　　　　　　　[C]

A) the metacentre M coincides with the centre of gravity G　　B) the metacentre M is below centre of gravity G　　C) the metacentre M is abovecentre of gravity G　　D) The centre of buoyance B is above centre of gravity G

75. A submerged body will be in stable equillibrium if　　　　　　　　　　　　　　　[D]

A) the centre of buoyance B is below the centre of Gravity G　　B) the centreof buoyance B coincides with G　　C) the centre of buoyance B is above the metacentre M　　D) the centre of buoyance B is above G

76. The metacentric height of a floating body is　　　　　　　　　　　　　　　　　　[C]

A) the distance between metacentre and centre of buoyancy　　B) the distance between the centre of buoyance and centre of gravity　　C) the distance between metacentre and centre of gravity　　D) Metacentre and cental point of body

77. The necessary condition for the flow to be steady is that　　　　　　　　　　　　[B]

A) the velocity does not change from place to place　　B) the velocity is constant at a point with respect to time　　C) the velocity is change at apoint with respect to time　　D) No relation between velocity and time

78. The necessary condition for the flow to be uniform is that　　　　　　　　　　　[B]

A) the velocity is constant at apoint with respect to time　　B) velocity is constant in a flow field with respect to space　　C) the velocity change at a point with respect to time　　D) No relation between velocity and time

79. The flow in pipe is laminar if　　　　　　　　　　　　　　　　　　　　　　　　[B]

A) Reynolds number is equal to 25000   B) Reynolds number is equal to 4000   C) Reynold number is more than 20000   D) Reynold number is equal to 25000

80. A stream line is a line   [C]

A) which is along the path of a particle   B) which is always parallel to the main direction of flow   C) across whichthereis no flow   D) on whichtengent drawn at any point given the direction of velocity

81. Continuioty equation can take the form   [C]

A) A1V1=A2V2   B) P1V1=P2V2   C) ρ1A1V1= ρ2A2V2   D) M1V1=M2V2

82. Pitot tube is used for measurement of   [C]

A) Pressure   B) Flow   C) Velocity at apoint   D) Discharge

83. The increase of temperature   [B]

A) Increase the viscosity of a liquid   B) decrease the viscosity of liquid   C) decrease the viscosity of gas   D) increase the viscosity of a gas

84. Stoke is the unit of   [C]

A) Surface tension   B) Viscosity   C) Kinematic viscosity   D) dynamic viscosity

85. The dividing factor for converting one poise into MKS unit of dynamic viscosity is   [B]

A) 9.81   B) 98.1   C) 981   D) 0.981

86. The motion of the fluid particles may be described by which of the following methods?   [C]

A) lagrangian method   B) Eulerain method   C) Eulerain method and lagragian method   D) Reynold method

87. Normal acceleration in fluid-flow situation exists only when   [B]

A) the flow is unsteady   B) the flow is two dimwnsional   C) the streamlines are straight and parallel   D) the streamlines are curved

88. In a steady flow the velocity   [B]

A) does not change from place to place   B) at a given point does not change with time   C) may change its direction but magnitude remain unchanged   D) May change magnitude only

89. The flow in a pipe whose valve is being opened or closed gradually is an example of 　　　　　　[C]

A) steady flow 　　　　B) unsteady flow 　　　　C) rotational flow 　　　　D) compressible flow

90. The type of flow in which the velocity at any given time does not change with respect to space is called 　　　　[C]

A) steady flow 　　　　B) compressible flow 　　　　C) uniform flow 　　　　D) rotational flow

91. Flow in a pipe where average flow parameters are considered for analysis is an example of 　　　　　　[B]

A) incompressible flow 　　　　B) one-dimensional flow 　　　　C) two dimensional flow 　　　　D) three-dimensional flow

92. The flow in a river during the period of heavy rainfall is 　　　　　　[D]

A) steady, non-uniform and three dimensional 　　　　B) steady,uniform,two dimensional 　　　　C) unsteady,uniform,three dimensional 　　　　D) unsteady, non-uniform and three dimensional

93. Flow between parallel plates of infinite extent is an example of 　　　　　　[B]

A) one-dimensional flow 　　　　B) two-dimensional flow 　　　　C) three-dimensional flow 　　　　D) compressible flow

94. If the flow irrotational as well as steady it is known as 　　　　　　[C]

A) non-uniform flow 　　　　B) one-dimensional flow 　　　　C) potential flow 　　　　D) circular flow

95. High velocity flow in a conduit of large size is known as 　　　　　　[B]

A) laminar flow 　　　　B) turbulent flow 　　　　C) totational flow 　　　　D) curved flow

96. If the reynold number is less than 2000 the in apipe is 　　　　　　[A]

A) laminar flow 　　　　B) turbulent flow 　　　　C) transition flow 　　　　D) straight flow

97. The path followed by fluid particle in motion is called a 　　　　　　[B]

A) streamline 　　　　B) path line 　　　　C) streak line 　　　　D) bottom line

98. A ---is an imaginary line within the flow so that the tangent at any point on it indicates the velocity at that point 　　　　[B]

A) Streak line 　　　　B) stream line 　　　　C) Path line 　　　　D) straight line

99. A stream line is one 　　　　　　[B]

A) in which stream function does not change

B) in which the flow can not cross the bounding surface

C) which has a constant area throughout its length so that the velocity remains constant

D) Pressure change with respect to time

100. is a curve which gives an instantaneous picture of the location of the fluid particles which have passed through a given point   [C]

A) Path line

B) stream line

C) streak line

D) straight line

101. In fluid mechanics the continuity equation is a mathematical statements embodying the principle of   [B]

A) conservation of momentum

B) conservation of mass

C) conservation of energy

D) conservation of pressure

102. An irrotational flow is one in which   [C]

A) the stream lines of flow are curved and closely spaced

B) the fluid does not rotate a it moves along

C) the net rotation of fluid particles about their mass centres remain zero

D) fluid moves in straight line

103. In a fluid -flow the stream lines are lines   [B]

A) along which the vorticity is zero

B) along which the stream function ψ=constant

C) which are parallel to the equipotential lines

D) which exist in irrotational flow only

104. Is defined mathematically as the line integral of the tangential velocity about a closed path (contour)   [A]

A) circulation

B) vorticity

C) straight line

D) curved line

105. The concept of stream function which is based on the principle of continuity is applicable to   [B]

A) irrotational flow only

B) two-dimensional flow only

C) three-dimensional flow only

D) uniform flow only

106. The motion is described as ---when the components of rotation or vorticity are zero throughout certain point of the fluid   [B]

A) rotational

B) irrotational

C) straight line

D) flow line

107. Is defined as the scalar function of space and time such that its negative derivatives with respect to any direction gives the fluid velocity in that direction   [A]

A) Velocity potential function

B) stream function

C) circulation

D) vorticity

108. A flownet is agraphical representation of stream line and equipotential lines such that these lines   [A]

A) intersect each other orthogonally forming   B) intersect each other at various different   C) indicate direction and magnitude of   D) indicate magnitude only
    curvilinear squares   angles forming irregular shape nets   vector

109. A material whose viscosity decrease with time is classified as a   [C]

A) Newtonian fluid   B) thixtropic substance   C) rheopectic substance   D) liquid

110. surface tension of a fluid   [B]

A) depends on the force of molecular   B) is inversely proportional to fluid density   C) is zero when the fluid is at rest   D) is the result of interaction between
    attraction   viscosity and atmospheric pressure

111. Euler's equation is written as   [B]

A) dp/ρ + v.dp +g .dz =0   B) dp/ρ + v.dv +g .dz =0   C) dp/p + v.dv +g .dz =0   D) dp/ρ + vpdv +g.dz =0

112. The coefficient of discharge of an orificemeter is --that of a venturimeter   [B]

A) equal to   B) much smaller than   C) much greater than   D) zero

113. Which of the following equation is known as momentum principle   [C]

A) F= d(v) /dt   B) F= dv/dt   C) F= d(mv) /dt   D) F= d(mv) /2dt

114. The piezometric head is the summation of   [B]

A) velocity head and pressure head   B) pressure head and elevation head   C) velocity head and elevation head   D) velocity head only

115. The total energy -line is always higher than the hydraullic gradient line,the vertical distance between the two representatig   [D]

A) the pressure head   B) the piezometric head   C) velocity head and elevation head   D) veocity head

116. The total-energy line in pipe flow is a graphical representation of the Bernoulli's equation and represents the sum of velocity head -pressure   [B]
head and elevation head

A) the top of the pipeline   B) the arbitrary horizontal datum   C) the centre line of pipe   D) the bottom of pipe

117. Falling drops of rai acquire spherical shape because of   [D]

A) compressibilty   B) viscosity   C) vapour pressure   D) surface tension

118. A stream line   [D]

A) is a line connecting the mid-points of each cross-section

B) exists only in steady uniform flow

C) is normal to the velocity vectors

D) is fixed in space if the flow is steady

119. A venturimeter is used for measuring   [B]

A) pressure

B) flow rate

C) total energy

D) piezometric head

120. The co-efficient of discharge (Cd) of venturimeter lies within the limits   [A]

A) 0.95 to 0.99

B) 0.8 to 0.85

C) 0.7 to 0.8

D) 0.6 to 0.7

121. A pitot tube is used for measuring   [A]

A) velocity of flow

B) pressure of flow

C) flow rate

D) total energy

122. when a pitot-tube is put to use it must be ensured that its alignment is such that   [C]

A) the horizontal leg shouldbe inclined at 45 Degreein plane

B) its horizontal leg is at right angles to the flow direction

C) its opening face upstream and the horizontal leg is perfectly aligned with the direction of flow

D) the horizontal leg shouldbe inclined at 80 Degree in plane

123. The hydraulic gradient -line indicates the variation of which of the following   [B]

A) velocity head in flow direction

B) piezometric headin the direction of flow

C) total energy of flow in the direction of flow

D) pressure head in flow direction

124. The momentum correction factor β is used to account for   [C]

A) change in direction of flow

B) change in total energy

C) non-uniform distribution of velocities at inlet and outlet sections

D) change in mass rate of flow

125. The change in moment of momentum of fluid due to flow along a curved path results in   [B]

A) a change in pressure

B) torque

C) a change in the total energy

D) change in mass

126. Which of the following is any example of of free vortex flow   [A]

A) A whirlpool in a river

B) uniform flow

C) laminar flow

D) straight flow

127. In case of forced vortex the rise of liquid level at the ends is ---the fall of liquid level at the axis of rotation   [C]

A) less than

B) more than

C) equal to

D) zero

128. In case of closed cylindrical vessel sealed at the top and the bottom the volume of air before rotation is---the volume of air after   [D]

A) more than

B) less than

C) zero

D) equal to

129. A path line   [B]

A) is tangentail to the velocity vector at every point

B) is the line along which a fluid particle has travelled over a period of time

C) is an instantaneous line connecting all fluid particles that have passed a given point

D) can be traced by injecting a dye into the fluid

130. A streak line   [A]

A) is an instantaneous line connecting all fluid particles that have passed the given points

B) is the trajectory of a single fluid particles over a period of time

C) is an instantaneous line connecting several fluid particles moving over a period of time

D) is an instanteous line normal to which the velocoty is zero

131. In a laminar flow, Reynold's number is   [A]

A) less than 2000

B) more than 2000

C) more than 2000 but less than 4000

D) more than 4000

132. In a turbulent flow,Reynold's number is   [A]

A) less than 4000

B) more than 4000

C) between 2000 and 4000

D) less than 2000

133. In case of a laminar flow the loss of pressure head is   [B]

A) Proportional to (pressure)

B) proportional to velocity

C) Proportional to viscosity

D) equal to velocity

134. In laminar flow   [B]

A) the viscosity of fluid is unimportant

B) Newton's law of viscosity applies

C) the shear stress is constant across the section

D) the fluid particles move in irregular paths

135. Darcy-Weibach equation is used to find loss head due to   [C]

A) sudden enlargement

B) sudden contraction

C) friction

D) Bending in pipe

136. Chezy's formula is given by   [C]

A) V=CD

B) V=CP

C) V=C

D) V=P

137. Turbulent flow generally occur in case involving   [D]

A) very slow motions

B) very viscous fluids

C) liquid flows through tubes of small diameter

D) high speed gas flows

138. steady flow occur when   [C]

A) conditions are the same at adjacent points at any instant

B) condition change steadily with time at any point

C) condition do not change with time at a given points

D) dv/dt= constant

139. A tidal wave passes through a river increasing the depth of flow as it passes. The type of flow is   [B]

A) steady

B) unsteady

C) irrotational

D) uniform

140. Uniform flow occurs   [C]

A) when the velocity vector remains unchange both in magnitude and direction at a given point

B) when dv/dt =constant at all points

C) when dv/ds=0

D) in tapering pipe provided the discharge is constant

141. The velocity at two different points along the length of a channel at a particular time are 1 m/s and 2 m/s.The type of flow is   [A]

A) non-uniform

B) uniform

C) unsteady

D) steady

142. The power transmitted through the pipe is maximum when head lost due to friction in the pipe is equal to   [A]

A) 1/3 rd of the total supply head

B) 1/4 th of the total supply head

C) 1/5 th of the total supply head

D) 1/8 th of the total supply head

143. The energy loss in a pipeline is due to   [C]

A) surface roughness only

B) viscous action only

C) friction offered by pipe wall as well as by viscous function

D) surface smoothness only

144. In a pipe flow the minor losses are those   [D]

A) which depend on the length of the pipeline

B) caused by friction and are thus also called friction losses

C) which have a small magnitude

D) which are caused on account of total distribution produced by such fittings as valves,bends etc

145. In flow through pipe bends the pressure on inner and out radii   [D]

A) stand at the same level increasing gradually towards the pipe centre

B) Vary , it being more on the inner core

C) are different, pressure increase with increase in radius and is therefore,more at the outer radius

D) do not vary and are the same as at the centre of the pipe

146. The condition for maximum transmission of power through a pipeline is that one-third of the available head must be consumed in friction .Efficiency is　　　　　　　　　[B]

A) 0.333　　　　　　　B) 0.6667　　　　　　　C) 0.9　　　　　　　D) 1

147. For achieving continuous flow through a system no position of the pipe should be higher than hydraulic gradient line　　　　　　　[C]

A) 20m　　　　　　　B) 6m　　　　　　　C) 7.6m　　　　　　　D) 10m

148. For turbulent flow in smooth pipes the entrance length is taken as　　　　　　　[B]

A) 20　　　　　　　B) 50　　　　　　　C) 80　　　　　　　D) 115

149. The entrance length or length of establishment of flow is　　　　　　　[D]

A) the length in which the boundry layer remain uniform　　　　B) the pipe length inside the reservior　　　　C) the length of pipe from its entrance in which the flow may be assumed irrotational　　　　D) the initial length in which th eflow developed fully such that the velocity profile does not change downstream

150. Due to which of the following phenomena water hammer is caused　　　　　　　[D]

A) Incompressibilty of fluid　　　　B) sudden opening of a valve in a pipeline　　　　C) the material of the pipe lbeing elastic　　　　D) sudden closure (partial or complete) of a valve in pipe flow

151. Under which the following condition the closure of valve is considered rapid　　　　　　　[C]

A) the durtion of valve closure is greater than 2L/C　　　　B) Duration of valve closure is less than L/C　　　　C) Duration of valve closure is less than 2L/c　　　　D) Duration of valve closure is equal to 2L/C

152. The laminar /viscous flow is characterised by Reynold's number which is　　　　　　　[A]

A) less than critical value　　　　B) equal to critical value　　　　C) more than critical value　　　　D) Not depend on critical value

153. The laminar flow is characterised by　　　　　　　[C]

A) existence of eddies　　　　B) irregular motion of fluid particles　　　　C) fluid particles moving in layer parallel to the boundary surface　　　　D) uniform flow of fluid particles

154. In case of lamionar flow the loss of pressure head is proportional to　　　　　　　[A]

A) velocity　　　　B) PV　　　　C) VPC　　　　D) Pressure

155. The K.E. correction factor a for a circular pipe is equal to　　　　　　　[A]

A) 2   B) 3   C) 4   D) 6

156. For viscous flow the co-efficient of friction is given by   [B]

   A) f=8/Re   B) f=16/Re   C) f=32/Re   D) f=60/Re

157. The maximum velocity in a circular pipe when flow is laminar occur at   [C]

   A) the top of the pipe   B) the bottom of the pipe   C) the centre of the pipe   D) not necessary at the centre

158. The input of a jet on a normal flat vane is maximum when   [B]

   A) the vane moves in the direction of jet   B) the vane moves opposites to the   C) the vane is stationary   D) series of such vanes are mounted on
                                                    direction of jet   a wheel

159. A jet of fluid of area a and velocity V impings on a normal flat plate which itself moves in the direction of jet at velocity u. The mass rate of   [C]
    flow striking the plate is

   A) ρaV   B) ρa(V+u)   C) ρa(V-u)   D) ρa(V-u)2

160. Water flow at a constant discharge through a pipe of varying diameter. The type of flow is   [D]

   A) steady   B) unsteady   C) uniform   D) non-uniform