

FLOW OF FLUIDS

1. When principle of conservation of energy is applied to flow of fluids then resulting equation is known as

- a) Reynolds number **b) Bernoulli's theorem** c) Hagen-Poiseuille's equation d) Kick's theory

2. Region between 2100-4000 for Reynolds number is known as

- a) Turbulent region b) Laminar region c) Safe region **d) Critical region**

3. In Bernoulli's theorem the Potential energy is also known as

- a) Resonance energy b) kinetic energy c) Thermal energy **d) Datum energy**

4. Which of the following is not a type of energy loss?

- a) Friction losses b) Enlargement losses **c) Resistance losses** d) Losses in fittings

5. Formula for datum energy is.....

- a) $\frac{u_a^2}{2g}$ **b) X_A** c) $\frac{P_A}{gP_A}$ d) $\frac{u_a^2}{2gP_A}$

6. Bernoulli's theorem state that the pressure energy, kinetic energy, datum energy at any point of the fluids is.....

- a) High **b) Constant** c) Low d) None of these

7. The SI unit of Energy is.....

- a) Meter b) Calorie **c) Joule** d) Kelvin

8. The energy possess by the body virtue of its motion is known as.....

- a) Kinetic energy** b) Potential energy c) Pressure energy d) None of these

9. The total energy in Bernoulli's theorem is sum of.....

- a) Thermal energy, datum energy, potential energy **b) Kinetic energy, potential energy, pressure energy** c) Potential energy, thermal energy, resonance energy d) Thermal energy, Datum energy, Frictional energy

10. Complete the Bernoulli's equation $\frac{PA}{\rho Ag} + XA + \frac{\mu A^2}{2g} + W - F = ?$

$$a) \frac{P_B}{\rho_B g} + X_B V + \frac{\mu B^2}{2g}$$

$$b) \frac{P_B V}{\rho} + X_B + \frac{\mu B^2}{2g}$$

$$c) \frac{P_B}{\rho_B g} + X_B + \frac{\mu B^2}{2g}$$

$$d) \frac{P_B}{\rho_B g h} + X_B + \frac{\mu B^2}{2g}$$

11. Which of the following is the type of manometer?

a) Simple manometer

b) Inclined manometer

c) Differential manometer

d) All of these

12. According to Bernoulli's equation, where the speed is high, the pressure will be.....

a) High

b) Low

c) Medium

d) No pressure

13. Fundamental equation that relates pressure to fluids speed & height is known as.....

a) Speed equation

b) Reynolds equation

c) Bernoulli's Equation

d) None of these

14. Which of the following works on principle of Bernoulli's theorem...?

a) Venturi meter

b) Orifice meter

c) Cyclone separator

d) Both A & B

15. Which is the formula of pressure energy in terms of Bernoulli's Equation.....?

$$a) \frac{P_A}{\rho g}$$

$$b) \frac{P}{\rho_A g}$$

$$c) \frac{P_A}{\rho_a g}$$

$$d) \frac{\rho g}{\rho_A g}$$

16. Bernoulli's theorem cannot be applied when flow is.....

a) Rotation

b) Turbulent

c) Unsteady

d) All of these

17. When the principle of conservation of energy is applied to the flow of fluids then resulting equation is called.....

a) Reynolds number

b) Bernoulli's theorem

c) Kick's theory

d) Hagen – Poiseuille's equation

18. The kinetic energy may be expressed as.....

$$a) \frac{\mu^2 A}{2g}$$

$$b) \frac{\mu^{2A}}{g}$$

$$c) \frac{\mu A}{2g}$$

$$d) \frac{\mu^2}{2g}$$

19. The Bernoulli's theorem is applied in measurement of.....

a) Rate of energy

b) Rate of fluid

c) Rate of velocity

d) Rate of sedimentation

20. The Bernoulli's theorem is applied in working of

- a) Venturi pump b) Orifice pump c) **Centrifugal pump** d) Both A & B

21. The Bernoulli's equation is based on assumption that.....

- a) There is no loss of energy of the liquid flowing. b) The velocity of flow is uniform across any cross section of the pipe. c) No force extenct gravity on the fluid. d) **All of these**

22. The change in Potential energy is measured as difference of

- a) mgf b) **mgh** c) mg d) mgt

23. The fundamental equation that relates pressure to liquid and height is known as.....

- a) **Bernoulli's Equation** b) Light Equation c) Speed Equation d) Equation of the continuity

24. change in kinetic energy is measured as difference of

- a) $\frac{1}{2}mv^2$ b) $(mv)^2$ c) $\frac{1}{2}mv$ d) $\frac{1}{(m)^2}$

25. If the Reynolds number is less than 2000, the flow in pipe is

- a) Turbulent b) **Laminar** c) Transition d) None of these

26. In Pipe flow the critical Reynolds number is.....

- a) 640 b) 5×10^5 c) **2000** d) 64000

27. Anemometer is used to measure.....

- a) **Velocity** b) Pressure c) Viscosity d) Internal Energy

28. Losses in fitting may be due to.....

- a) Change in flow b) Change in Direction c) Change in type of fitting d) **Both B & C**

29. There is no loss of energy when.....

- a) Cross section of pipe enlarges suddenly b) Cross section of pipe reduces suddenly c) Cross section of pipe contracts gradually **d) Cross section of pipe enlarges gradually**

30. When cross section of pipe changes suddenly loss of energy is due to

- a) Air trapped b) Sudden changes in pipe c) **Eddies** d) None of the above

31. η in Poiseuilles equation is representing.....

- a) Velocity of fluids **b) Viscosity of fluids** c) Pressure of fluids d) Density of fluids

32. During flow of fluids.....causes loss in pressure

- a) **Frictional forces** b) Circular motion c) Centrifugal force d) Both A & C

33. Contraction losses are represented as.....

- a) $\Delta H_e = \frac{k\mu_2^2}{2g}$ b) $\Delta H_e = \frac{k\mu}{2g}$ c) $\Delta H_e = \frac{k\mu_3^3}{2g}$ d) $\Delta H_e = \frac{k\mu}{2\Delta g}$

34. Hagen- poiseuille's equation is.....

- a) $\Delta P_f = \frac{32L\eta\eta}{D^2}$ b) $\Delta P_f = \frac{32L\eta\eta}{D^3}$ c) $\Delta P_f = \frac{32L\eta\eta}{D}$ d) none of these

35. Pressure drop is represented as.....

- a) ΔF_p b) **ΔP_f** c) both A & B d) none of these

36. Orifice meter is referred as.....

- a) **Variable head meter** b) Insertion meter c) Variable area meter d) Both A & B

37. Sudden enlargement loss represented by.....

- a) $\Delta H_e = \frac{(\mu_1 - \mu_2)^2}{2g}$ b) $\Delta H_e = \frac{(\mu_2 - \mu_1)^2}{2g}$ c) $\Delta H_e = \frac{(\mu_1 - \mu_2)}{2g}$ d) $\Delta H_e = \frac{(\mu_1 - \mu_2)}{2g^2}$

38. The Property of fluid they describe internal resistance it is known as.....

- a) **Frictional loss**
- b) Shock loss
- c) Resistance
- d) Internal Energy

39. Which of the following is major loss?

- a. **Frictional loss**
- b. Shock loss
- c. Inlet loss
- d. Exit loss

40. Which property of fluid account for the major losses in pipe?

- a. Density
- b. Specific gravity
- c. **Viscosity**
- d. Compressibility

41. The frictional resistance for fluid in the motion is.....

- a. **Proportional to the velocity in laminar flow and to the square of the velocity in turbulent flow**
- b. Proportional to the Square of the velocity in laminar flow and to the velocity in turbulent flow
- c. Proportional to the velocity in both laminar flow and turbulent flow.
- d. Proportional to the square of the velocity in both laminar & turbulent flow.

42. The Frictional resistance for fluid in motion is.....

- a. Inversely proportional to the square of the surface area of its contact.
- b. Inversely proportional to the square of the surface Area of contact.
- c. Proportional to the square of surface area of contact.
- d. **Proportional to the surface area of contact**

43. The Frictional Resistance For fluid in motion is.....

- a. Dependent on the pressure for both laminar & turbulent.
- b. **Independent of the pressure for both laminar & turbulent.**
- c. Dependent on the pressure for both laminar & independent of the pressure for turbulent flow
- d. Independent on the pressure for laminar flow & dependent on the pressure for Turbulent.

44. The device which is used for making the temporary measurement of flow is.....

- a. Venturimeter
- a. Dull flow tube
- b. **Orifice plate**
- c. Pitot static tube

45. After the suddenly allow of fluid stream towards the narrow constriction the following will increase.

- a. **Increase velocity of fluid at orifice meter** b. Increase pressure of the fluid at orifice meter c. Increase temperature of the fluid at orifice meter b) None of these.

46. The difference in pressure head, ΔH can be read by.....

- a. Galvanometer b. **Manometer** c. Photometer b) None of these

47. What is the constant of orifice meter?

- a) C_0 b) ΔH c) Both a and b d) U_0

48. Orifice meter is also referred as

- a) Venturimeter b) Pitot meter c) **Variable head meter** d) Rota meter

49. As a result of pressure in orifice meter is higher at _____ point than point B

- a) **Point A** b) Point B c) Both points d) None of above

50. The orifice meter helps us to calculate _____ at point A and B.

- a) Temperature b) **Velocity** c) Pressure d) None

51. Orifice meter is _____ plate.

- a) Thick b) Wide c) **Thin** d) None of above

52. Choose the formula of orifice meter

- a) $PV = nRT$ b) $\sqrt{uv^2 - u_0^2}$ c) **$u_0 = C_0 \sqrt{2g\Delta H}$** d) Both A and C

53. Pressure of head is denoted by _____

- a) ΔP b) **ΔH** c) ΔPH d) None of above

54. Orifice meter is part of _____

- a) **Flow of fluid** b) Size reduction c) Size separation d) Venturimeter

55. According to Bernoulli's equation velocity head of _____ fluid of pitot tube obtained by which of the following equation.

- a) $\Delta HP = V^2 / 2g$ b) $\Delta HP = 2g/V$ c) $\Delta HP = 2g/ V \times u$ d) $\Delta HP = V/2g$

56. Pitot tube is used to measure of _____

- a) Velocity b) Speed c) **Flow** d) Density

57. Pitot tube measure velocity _____ point only.

- a) All b) **One** c) Two d) End

58. Which of the following is advantage of pitot tube?

- a) It measures velocity at one point b) They do not give average velocity results directly c) Both d) **None of these**

59. Pitot tube also is known as _____ tube.

- a) **Insertion tube** b) Venturi tube c) Connective tube d) None of these

60. In pitot tube the direction of flow tube is _____

- a) **Perpendicular and parallel** b) Parallel c) Opposite d) Same

61. Rotameter measure the _____

- a) **Area of flow** b) Cross section of flow c) Height of flow d) Velocity of flow

62. In Rotameter, plummet rises and falls because of _____ in flow.

- a) Area b) Velocity c) **Variation** d) Height

63. The upper edge of plummet is used to _____ on tapered tube.

- a) Weight b) Measure c) **Reading** d) Flow

64. Rotameter tube is made up of _____

- a) **Glass** b) Wood c) Fiber d) Plastic

