

Question Bank for 1st unit test

Class:CH4G

Sub:FFO(17426)

Chapter 1(12 marks)

3 marks question

1. Define compressible fluids and incompressible fluids.
2. Define Newtonian and Non Newtonian fluids
3. Define steady state and unsteady state.
4. Define dynamic viscosity and kinematics viscosity. Give its unit.
5. Define Newton's law of viscosity. Give the mathematical expression.
6. Define mass velocity, potential flow and fully developed flow.

4 marks question

- 7 Draw the diagram of U tube manometer and mark the parts.
8. Find the pressure in N/m^2 due to a column of
 - a) 10 cm of water
 - b) 10 cm of Hg (specific gravity of mercury is 13.6)

Chapter 2(28 marks)

3 marks question

9. Define Fanning's friction factor. Give its value for laminar and turbulent flow.
10. When the pipe is said to be hydraulically smooth? Define equivalent length. Give the Significance of N_{Re} .
11. Write the formula for Reynolds number and explain the terms.
12. Water is flowing through a pipe of 3cm diameter at a velocity of 5cm/s. Suddenly it

enters a pipe of diameter 5cm. Calculate the frictional loss due to sudden expansion of flow area?

13. Find the critical velocity when water is flowing through a pipe of 10cm diameter?

14. Find the fanning's friction factor when water is flowing through a pipe of 4cm diameter at a velocity of 7cm/s.

4 marks question

15. Draw the velocity profile when fluid is flowing through a straight pipe. Give the relation between U and U_{\max}

16. Derive equation of continuity.

17. Give the Bernoulli's equation and explain the terms.

18. Explain the kinetic energy correction used in Bernoulli's equation.

19. Give the Hagen Poiseuille's equation and explain the terms.

20. Give the significance of terms used in Bernoulli's equation.

21. Show that N_{Re} is dimensionless .

22. Explain why correction for fluid friction is done in Bernoulli's equation?

23. Find the friction factor when water is flowing through a 1.5cm diameter pipe at a Velocity of 2cm/s.

24. CCl_4 is flowing through a 3.5 cm diameter pipe .Suddenly it enters a pipe of diameter of 2cm. Velocity in the small diameter pipe is 2.5cm/s. Calculate the frictional loss due to sudden contraction of flow area.

25. Calculate N_{Re} if fluid of specific gravity 1.1 and viscosity 0.97 cp is flowing through a 3cm diameter pipe at a velocity 2m/s.

Question Bank for 2nd unit test

Class:CH4G

Sub:FFO(17426)

Chapter 2(weightage10 marks)

1. Draw the diagram of venturimeter and mark the parts
2. What is the difference between velocity obtained from an orificemeter and pitot tube?
3. Give the equation for calculating volumetric flow rate using a venturimeter and explain the terms
4. Explain the construction and working of a pitot tube
5. Water is flowing through an orificemeter at $500\text{cm}^3/\text{s}$. what is the pressure difference in the manometer connected across the meter. C_o is 0.65. diameter of the pipe is 5.3cm and diameter of the orifice is 2.5cm
6. Find out the mass flowrate of water using a venturimeter if manometer reads 10cm of Hg. Diameter of the pipe is 4cm and diameter of the throat is 2cm.

Chapter 3 (weightage 10marks)

7. Draw the diagram of any 4 fittings
8. Draw the diagram of gate valve and mark the parts
9. Draw the diagram of control valve and mark the parts
10. Why globe valve causes more pressure drop than gate valve?
11. Differentiate gate valve and globe valve based on a) application b) pressure drop
12. Draw neat diagram of globe valve

Chapter 4(weightage 30 marks)

13. Give the classification of pumps
14. Explain priming of centrifugal pump
15. Explain NPSH
16. Explain Cavitation in a pump
17. Explain air binding .
18. Draw the diagram of a centrifugal pump and mark the parts
19. Draw the diagram of a gear pump and mark the parts
20. Compare centrifugal pump and positive displacement pump based on following points
A) mode of delivery b) priming c) efficiency d) liquids with solids suspended
21. Draw the diagram of a jet ejector and mark the parts
22. Explain the working of a jet ejector
23. Differentiate between single acting and double acting reciprocating pump
24. Explain characteristics curve of a centrifugal pump
25. Draw the diagram of diaphragm pump and mark the parts.