Q.25 State equation of continuity & write mathematical expression for it?

Q.26 Explain frictional loses in pipes?

Q.27 What is cavitation? How it can be avoided?

Q.28 Discuss Newtonian fluids in brief?

Q.29 What is difference between skin friction & form friction?

Q.30 What are the advantages and disadvantages of a butterfly valve?

Q.31 Describe construction of pitot tube in brief.

Q.32 What is difference between centrifugal and reciprocating pump?

Q.33 Discuss the significance of any one dimensionless number ?

Q.34 Explain the construction of rotary pump in brief?

Q.35 Describe the working of U tube manometer?

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 What are valves? List different types of valves used in the chemical industry? Describe any two of them in detail?

Q.37 Explain the principle, construction and working of a reciprocating pump with the help of a neat diagram?

Q.38 Describe the construction, working & advantages of a orifice meter with the help of a neat diagram?

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3rd Sem / Chem, P&P, Chem Engg. (Spl. Paint Tech.), Chem Engg. (Spl. Polymer Engg.)

Subject:- Fluid Flow

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 What is the name of the device used to generate a pressure greater than two atmospheres for gases?

a) Pump b) Fan
c) Blower d) Compressor

Q.2 Polymer melts are classified as which of the following type of fluid?

a) Ideal fluid b) Newtonian fluid
c) Non-Newtonian fluid d) None of the above

Q.3 What should be the value of Reynolds number for laminar flow in a circular pipe?

a) >2100 b) <2100
c) >4000 d) <4000

Q.4 The curve between shear stress and velocity gradient, which passes through the origin, in concave downward at low shears, and becomes nearly linear at high shears represents?

a) Thixotropic fluid b) Newtonian fluid
c) Pseudoplastic fluid d) Dilatant fluid

Q.5 Which of the following devices is used to measure the velocity of fluid flow at a particular point?

a) Ventrimeter b) Rotameter

c) Pitot Tube d) Orificemeter

Q.6 The flow of ideal fluid is called?

a) Steady flow b) Laminar flow

c) Uniform flow d) Potential flow

Q.7 Which of the following device is used for transportation of liquids?

a) Pump b) Fan

c) Blower d) Compressor

Q.8 The process by which liquid may flash to vapor inside the pump is called?

a) Priming b) Cavitation

c) NPSH d) Suction

Q.9 Which of the following devices is used for measuring flow rate of liquids?

a) Thermometer b) Hydrometer

c) Voltmeter d) Venturimeter

Q.10 The opening for flow of fluid increases almost linearly with stem position in which of the following valve?

a) Check valve b) Ball valve

c) Gate valve d) Globe valve

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 What is the full form of NPSH?

Q.12 Define the viscosity?

Q.13 What is S.I. unit of pressure?

Q.14 Write one example of Newtonian fluid?

Q.15 Write an expression to calculate volumetric flow rate from mass flow rate?

Q.16 What is uniform flow?

Q.17 Write mathematical expression to calculate Reynolds number?

Q.18 Write two types of fittings used in industrial piping system?

Q.19 Define the compressor?

Q.20 Write one application of ball valve?

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 What is suction pressure? Discuss its significance?

Q.22 What is difference between uniform & non-uniform flow?

Q.23 Why measurement of flow of fluid is important?

Q.24 What is difference between fluid statics & fluid dynamics?