Q.26 Derive the equation for orifice meter with neat and clean diagram.
Q.27 Discuss about centrifugal pumps, including its working principle and applications.
Q.28 Write about friction factor chart.
Q.29 What is dimensionless numbers and its significance.
Q.30 Write down various types Friction Losses in Pipes.
Q.31 Explain the purpose of Pipes and its type in a fluid transport system.
Q.32 Differentiate between laminar and turbulent flow with diagram?
Q.33 Explain Hagen Poiseulli's Equation and its implications in fluid dynamics.
Q.34 Write about the Rotameter with diagram.
Q.35 Derive Bernoulli's theorem, and also write its assumptions.

SECTION-D

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

Q.36 Discuss the equations and coefficients involved in calculating flow rate using an venturimeter.
Q.37 Describe the working principles of a reciprocating pump with construction, application and advantages.
Q.38 Write short note on any of three:-
a) Fluid Flow b) Priming
c) Roughness in pipes
d) colour coding of industrial piping
e) Schedule number

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 Which of the following factors affects the viscosity of a fluid?
a) Temperature b) Pressure
c) Density d) All of the above
Q.2 In fluid mechanics, the term "Reynolds number" is used to characterize:
a) Pressure drop in a pipe
b) Flow regime (whether laminar or turbulent)
c) Fluid temperature
d) Fluid density
Q.3 What is the primary function of a pump in a fluid flow system?
a) Increase fluid velocity
b) Decreases fluid pressure
c) Increase fluid pressure
d) Decrease fluid velocity
Q.4 What is the primary purpose of a Venturi meter in fluid mechanics?

a) Measure fluid density
b) Measure fluid pressure
c) Measure fluid flow rate
d) Measure fluid viscosity

Q.5 The Bernoulli's equation is based on the conservation of:
a) Mass b) Energy
c) Momentum d) Temperature

Q.6 Which instrument is commonly used to measure low-flow rates of fluids?
a) Rotameter b) Venturi meter
c) Orifice plate d) Pitot tube

Q.7 Which equation is used to calculate the pressure drop across an orifice?
a) Hagen-Poiseuille equation
b) Bernoulli's equation
c) Darcy-Weisbach equation
d) Torricelli's law

Q.8 The concept of "Specific speed" in pump selection is related to:
a) Pump efficiency b) Pump speed
c) Pump head d) Pump flow rate

Q.9 Which type of valve is well-suited for applications where a tight seal is required, such as in hazardous materials handling?
a) Globe valve b) Ball valve
c) Butterfly valve d) Diaphragm valve

Q.10 What is the atmospheric pressure at sea level in standard units?
a) 101.3 kPa b) 1 atm
c) 14.7 psi d) All of the above

SECTION-B

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

Q.11 What does the term "incompressible" mean in fluid flow?
Q.12 Write full form of NPSH?
Q.13 Write equation for hydrostatic law.
Q.14 Explain the term "head loss" in fluid dynamics.
Q.15 Define Dimensionless number?
Q.16 What is Blower?
Q.17 Define friction?
Q.18 State Pascal's principle.
Q.19 Name any two Pump used in industry
Q.20 Write formula of continuity equation?

SECTION-C

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

Q.21 Describe the term "cavitation" in the context of fluid dynamics.
Q.22 Explain about properties of Fluid.
Q.23 Describe the working principle of a U-tube manometer.
Q.24 Discuss the working of gate valve with diagram.
Q.25 What is meant by rotational and irrotational flow, and its significant?