Question Bank (I scheme)

Name of Course: Fluid Flow Operation (FFO) **Subject code: 22409**

Semester : IV **Programme: Chemical**

Unit test I

Unit 1 : Fluid flow properties (10marks)

TWO marks question

1. Define compressible fluids and incompressible fluids.
2. Define Newtonian and Non Newtonian fluids
3. Define dynamic viscosity and kinematics viscosity.
4. Define Newton's law of viscosity.

FOUR marks question

5. Draw the diagram of U tube manometer and mark the parts.
6. Estimate 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)
7. Explain the working of Ubbelohde viscometer
8. Compare Redwood viscometer no 1 and Redwood viscometer no 2

Unit2: Fluid flowparameters(12marks)

TWO marks question

9. Define steady state and unsteady state.
10. Define mass velocity and fully developed flow.
11. Define Fanning's friction factor. Give its value for turbulent flow.
12. Give the formula for Reynolds number and explain the terms.
13. . Draw the velocity profile when fluid is flowing through a straight pipe
14. Give the Hagen Poiseuille's equation and explain the terms.

FOUR marks question

15. Water is flowing through a pipe of 3cm diameter at a velocity of 5cm/s. Suddenly it enters a pipe of diameter 5cm.Estimate the frictional loss due to sudden expansion of flow area?
16. Estimate the critical velocity when water is flowing through a pipe of 10cm diameter?

17. Calculate the fanning's friction factor when water is flowing through a pipe of 4cm diameter at a velocity of 7cm/s.
18. Explain and derive equation of continuity.
19. Show that NRe is dimensionless.

Unit 3: Incompressible fluid flow measurement(13marks)

TWO marks question

20. State Bernoulli's principle
21. List the assumptions made while deriving Bernoulli's equation
22. Differentiate between variable head meter and variable area meter

FOUR marks question

23. Explain the kinetic energy correction used in Bernoulli's equation
24. Give the significance of terms used in Bernoulli's equation.
25. Explain the correction for fluid friction used in Bernoulli's equation