Q.31 A pitot tube is used to measure the velocity of water in a pipe in which the static pressure head is 10m. If C_v=0.97 and stagnation pressure head is 15m, find the velocity of flow.

Q.32 The pressure intensity at a point in a fluid is given as 40 KN/m^2. Find the corresponding height of fluid when the fluid is (a) water (b) oil of specific gravity 0.9.

SECTION-D

Note: Long answer type questions. Attempt any three questions out of four questions. 3x10=30

Q.33 State and drive Bernoulli's theorem.

Q.34 Drive an expression for rate of flow or discharge through a orifice meter.

Q.35 Explain the construction and working of centrifugal pump with the help of neat sketch.

Q.36 Drive an expression for pressure difference measured by inverted U-tube manometer.

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3rd Sem. / Plastic Tech.
Subject : Viscous flow of fluids/Unit Op-I

Time : 3 Hrs. M.M. : 100

SECTION-A

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

Q.1 An ideal fluid is a fluid which is _____.

Q.2 N/m is the unit of _____.

Q.3 Pressure intensity exerted by 1 m column of water is _____.

Q.4 The standard value of atmospheric pressure is _____.

Q.5 When the velocity of flow increases, the pressure _____.

Q.6 The inlet length of venturi meter is _____ the outlet length.

Q.7 Reynold's number is given by_____.

Q.8 A hydraulic pump is a device which converts

_____.

Q.9 A Non-newtonian fluid is a fluid which _____.

Q.10 The specific gravity of water is _____.

SECTION-B

Note: Very short answer type questions. Attempt any ten questions out of twelve questions. 10x2=20

Q.11 Define hydraulics.

Q.12 Define mass density of fluid.

Q.13 State Kinematic viscosity.

Q.14 State intensity of pressure of a liquid.

Q.15 Define manometer.

Q.16 Define differential manometer.

Q.17 Define uniform flow.

Q.18 State pressure energy of a liquid.

Q.19 Define pitot tube.

Q.20 State critical velocity.

Q.21 Define wetted perimeter.

Q.22 Define centrifugal pump.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. 8x5=40

Q.23 Drive the relation between specific weight and mass density.

Q.24 A vessel 3m x 1m contains oil of specific gravity of 0.84 upto a depth of 2 m. What is the intensity of pressure and total pressure at the base of the tank?

Q.25 Explain advantages of manometers. Any five.

Q.26 State the conditions for the flow to be laminar.

Q.27 Explain venturimeter with the help of neat sketch.

Q.28 Find loss of head due to friction in a pipe of 500 mm diameter and 1.5 kilometer long. The velocity of water in the pipe is 1 m/s. Take coefficient of friction as 0.05.

Q.29 Explain difference between centrifugal pump and reciprocating pump.

Q.30 Explain the loss of head due to sudden enlargement of pipe.