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3rd Sem / Civil Engg. Brick. Tech, Const. Mgmt, Highway Engg.

Subject:- Fluid Mechanics

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Water is said to be
a) viscous fluid b) Ideal plastic fluid
c) Newtonian fluid d) Non newtonian fluid

Q.2 Poise is the unit of
a) viscosity b) surface tension
c) capillarity d) Density

Q.3 Real fluids are
a) Posses surface tension
b) Viscous
c) compressible
d) All of the above

Q.4 The numerical value of 1 Pa of pressure is equal to
a) $1MN/m^2$ b) $10^5N/m^2$
c) $1KN/m^2$ d) $1N/m^2$

Q.5 The resultant Hydrostatic pressure act through a point known as
a) centre of buoyancy b) centre of pressure
c) centre of gravity d) None of the above

Q.6 Atmospheric pressure standard value is
a) 10.34m of water b) 76cm of mercury
c) 1.01325 bar d) all of the above

Q.7 Mouthpiece are used to
a) reduce flow rate
b) increase flow rate
c) increase head of liquid
d) none of these

Q.8 Reynold's number for pipe flow is given by
a) $\frac{VD}{n}$ b) $\frac{VD\mu}{\delta}$
c) $\frac{VDS}{\mu}$ d) $\frac{VD}{\mu}$

Q.9 Best section for open channel flow is
a) semi circle b) triangular
c) rectangular d) trapezoidal

Q.10 Equation of continuity is
a) A.V. = constant b) A/V = constant
c) A^2/V = constant d) V/A = constant

SECTION-B

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

Q.11 Laminar flow is also called _____ flow.

Q.12 Continuity equation of flow is based on the principle of _____.

Q.13 Write Darcy formula.

Q.14 Name the three types of energy.

Q.15 Hydraulic pump is a device which converts _____ energy into _____ energy.

Q.16 Write manning formula for discharge through an open channel.

Q.17 Write turbulent flow.

Q.18 The inlet length of a venturimeter is less than outlet length. (True/False)

Q.19 Units of Kinetic viscosity is m^2/s. (True/False)

Q.20 The point where the resultant pressure acts is called _____.

SECTION-C

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

Q.21 Differentiate between real fluids & ideal fluid. (CO-1)

Q.22 Explain about fluid property 'capillarity'. (CO-1)

Q.23 What are Newtonian and non Newtonian fluid and give their examples. (CO-2)

Q.24 Explain about Pascal Law. Explain its utility. (CO-)

Q.25 Explain the terms of Hydrostatic, Hydrodynamic and Hydrokinematics. (CO-1)

Q.26 Write a short note on dynamic pressure pumps. (CO-9)

Q.27 Explain (CO-8)

a) Hydraulic jump b) Cavitation

Q.28 Define wetted perimeter and Hydraulic mean depth. (CO-8)

Q.29 A rectangular channel 5m wide and 2m deep is having a slope of 2 in 10,000. The channel conveys a discharge of 8.94 m^3/s. Find the value of Chezy's const. (CO8)

Q.30 What is Laminar flow and Turbulent flow? (CO-5)

Q.31 Write the functions of an orifice meter. (CO-6)

Q.32 State Bernoullis theorem and its applications. (CO-)

Q.33 What are the types of Hydraulic energy? (CO-5)

Q.34 Explain about centre of pressure. (CO-3)

Q.35 Write down any three example of surface tension. (CO-2)

SECTION-D

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

Q.36 What is the functions of venturimeter? Explain its principle of working. (CO-6)

Q.37 Explain about various types of fluid flow. (CO-5)

Q.38 What is reciprocating pump? Write down in detail about the main parts and working of single acting reciprocating pump along with neat sketch. (CO-9)

(Note : Course outcome/CO is for office use only)