

B.Tech 3rd Semester, Weekly Test- 1, 2018

Fluid mechanics

Subject Code: 01 1X07

Full Marks: 10

1. The unit of dynamic viscosity of fluid is
 - a. m^2/s
 - b. $\text{N.s}/\text{m}^2$
 - c. $\text{Pa.s}/\text{m}^2$
 - d. $\text{Kg.s}^2/\text{m}^2$

2. The unit of kinematics viscosity is
 - a. $\text{g}/\text{cm}\text{-sec}^2$
 - b. $\text{dyne}\text{-sec}/\text{cm}^2$
 - c. $\text{g}/\text{cm}^2\text{-sec}$
 - d. cm^2/sec

3. viscosity is a property that manifests
 - a. at fluid -solid boundaries only
 - b. Between two adjacent fluid layers in relative motion
 - c. In uniform in compressible flow
 - d. Only in turbulent flows

4. With increase in temperature viscosity of a fluid
 - a. does not change
 - b. always increases
 - c. always decreases
 - d. increases if the fluid is a gas and decreases if it is a liquid

5. In order that a droplet of water at 20 degree centigrade($\sigma = 0.0728 \text{ N/m}$) has an internal pressure 1 kilo Pascal greater than that of outside it. Its diameter should be nearly
 - a. 0.15 mm
 - b. 0.3mm
 - c. 0.6 mm
 - d. 1.2mm

6. A perfect fluid (Also known as an ideal fluid) is

- a. real fluid
 - b. the one with of a perfect gas laws
 - c. compressive and gaseous
 - d. incompressible and frictionless
7. A fluid is one which can be defined as substance that
- a. has the same shear stress at all points.
 - b. can deform indefinitely under the action of smallest shear force
 - c. has same shear stress in all directions
 - d. is practically incompressible
8. A fluid is said to be Newtonian when the shear stress is
- a. Directly proportional to the velocity gradient
 - b. Indirectly proportional to the velocity gradient
 - c. inversely Proportional to velocity gradient
 - d. None of the above
9. Shear stress in the newtonian fluid is proportional to
- a. Pressure
 - b. strain
 - c. strain rate
 - d. the inverse of the viscosity
10. For $\mu=0.06$ poise $\rho = 0.9\text{g/cm}^2$ kinematic viscosity ν in stokes is
- a. 0.04
 - b. 0.054
 - c. 0.067
 - d. 0.4