Practice Questions
Phy 103

1. Fluid is a substance that (a) cannot be subjected to shear forces (b) always expands until it fills any container (c) has the same shear stress.at a point regardless of its motion (d) cannot remain at rest under action of any shear force (e) flows.

   Ans: d
2. Fluid is a substance which offers no resistance to change of

(a) Pressure (b) flow (c) shape (d) volume (e) temperature. Ans: c

3. Practical fluids (a) are viscous (b) possess surface tension (c) are compressible (d) possess all the above properties (e) possess none of the above properties. Ans: d
4. in a static fluid (a) resistance to shear stress is small (b) fluid pressure is zero (c) linear deformation is small (d) only normal stresses can exist(e) viscosity is nil. Ans: d
5. A fluid is said to be ideal, if it is (a) incompressible (b) inviscous (c) viscous and incompressible (d) inviscous and compressible (e) inviscous and incompressible. Ans: e
6. An ideal flow of any fluid must fulfill the following (a) Newton's law of motion (b) Newton's law of viscosity (c) Pascal' law (d) Continuity equation (e) Boundary layer

theory. Ans: d

7. If no resistance is encountered by displacement, such a substance is known as (a) fluid (b) water (c) gas (d) perfect solid (e) ideal fluid. Ans: e
8. The volumetric change of the fluid caused by a resistance is known as (a) volumetric strain (b) volumetric index (c) compressibility (d) adhesion (e) cohesion. Ans: c
9. Liquids (a) cannot be compressed (b) occupy definite volume (c) are not affected by change in pressure and temperature d) GO are not viscous (e) none of the above. Ans: e
10. Density of water is maximum at (a) 0°C (b) 0°K (c) 4°C (d) 100°C (e) 20°C. Ans: c

12. The value of mass density in kgsecVm4 for water at 0°C is (a) 1 (b) 1000 (c) 100 (d) 101.9 (e) 91

Ans: d

14. Property of a fluid by which its own molecules are attracted is called (a) adhesion (b) cohesion (c) viscosity (d) compressibility (e) surface tension. Ans: b
15. Mercury does not wet glass. This is due to property of liquid known as (a) adhesion (b) cohesion (c) surface tension (d) viscosity (e) compressibility.

    Ans: c
16. The property of a fluid which enables it to resist tensile stress is known as (a) compressibility (b) surface tension (c) cohesion (d) adhesion (e) viscosity.

    Ans: c
17. Property of a fluid by which molecules of different kinds of fluids are attracted to each other is called (a) adhesion (b) cohesion (c) viscosity (d) compressibility (e) surface

tension. Ans: a

18. The specific weight of water is 1000 kg/m" (a) at norma] pressure of 760 mm (b) at 4°C temperature (c) at mean sea level (d) all the above (e) none of the above. Ans: d

19. Specific weight of water in S.I. units is equal to (a) 1000 N/m3 (b) 10000 N/m3 (c) 9.
81 xlO3 N/m3 (d) 9.81 xlO6N/m3 (e) 9.81 N/m3.
Ans: c

20. When the flow parameters at any given instant remain same at every point, then flow is said to be (a) quasi static (b) steady state (c) laminar (d) uniform (e) static. Ans: d

21. Which of the following is dimensionless (a) specific weight (b) specific volume (c) specific speed (d) specific gravity (e) specific viscosity. Ans: d

22. The normal stress in a fluid will be constant in all directions at a point only if (a) it is incompressible (b) it has uniform viscosity (c) it has zero viscosity (d) it is frictionless (e) it is at rest. Ans: e

23. The pressure at a point in a fluid will not be same in all the directions when the fluid is (a) moving (b) viscous (c) viscous and static (d) in viscous and moving (e) viscous and
moving. Ans: e

24. An object having 10 kg mass weighs 9.81kg on a spring balance. The value of 'g' at this place is (a) 10m/sec2 (b) 9.81 m/sec2 (c) 10.2/m sec (d) 9.75 m/sec2 (e) 9 m/sec . Ans: a

25. The tendency of a liquid surface to contract is due to the following property (a) cohesion (b) adhesion (c) viscosity (d) surface tension (e) elasticity. Ans: d

26. The surface tension of mercury at normal temperature compared to that of water is (a) more (b) less (c) same (d) more or less depending on size of glass tube (e) none of
the above. Ans: a

27. A perfect gas (a) has constant viscosity (b) has zero viscosity (c) is incompressible (d) is of theoretical interest (e) none of the above.
Ans: e

32. For very great pressures, viscosity of moss gases and liquids (a) remains same (b) increases (c) decreases (d) shows erratic behaviour (e) none of the above. Ans: d

33. A fluid in equilibrium can't sustain (a) tensile stress (b) compressive stress (c) shear
stress (d) bending stress (e) all of the above. Ans: c

34. Viscosity of water in comparison to mercury is (a) higher (b) lower (c) same (d) higher/lower depending on temperature (e) unpredictable. Ans: a

35. The bulk modulus of elasticity with increase in pressure (a) increases (b) decreases (c) remains constant (d) increases first up to certain limit and then decreases (e) unpredictable. Ans: a

36. The bulk modulus of elasticity (a) has the dimensions of 1/pressure (b) increases with pressure (c) is large when fluid is more compressible (d) is independent of pressure and viscosity (e) is directly proportional to flow. Ans: b

37. A balloon lifting in air follows the following principle (a) law of gravitation (b) Archimedes principle (c) principle of buoyancy (d) all of the above (e) continuity equation. Ans: d

38. The value of the coefficient of compressibility for water at ordinary pressure and temperature in kg/cm is equal to (a) 1000 (b) 2100 (c) 2700 (d) 10,000 (e) 21,000. Ans: e

39. The increase of temperature results in (a) increase in viscosity of gas (b) increase in viscosity of liquid (c) decrease in viscosity of gas (d) decrease in viscosity of liquid (e) (a) and (d) above. Ans: d

40. Surface tension has the units of (a) newtons/m (b) newtons/m (c) newton/m (d) newtons (e) newton m. Ans: c

41. Surface tension (a) acts in the plane of the interface normal to any line in the surface (b) is also known as capillarity (c) is a function of the curvature of the interface (d) decreases with fall in temperature (e) has no units. Ans: a

42. The stress-strain relation of the newtoneon fluid is (a) linear (b) parabolic (c) hyperbolic (d) inverse type (e) none of the above. Ans: a

43. A liquid compressed in cylinder has a volume of 0.04 m3 at 50 kg/cm2 and a volume of 0.039 m3 at 150 kg/cm2. The bulk modulus of elasticity of liquid is (a) 400 kg/cm2 (b) 4000 kg/cm2 (c) 40 x 105 kg/cm2 (d) 40 x 106 kg/cm2 (e) none of the above. Ans: b

44. The units of viscosity are (a) metres2 per sec (b) kg sec/metre (c) newton-sec per metre2 (d) newton-sec per metre (e) none of the above. Ans: b

45. Kinematic viscosity is dependent upon (a) pressure (b) distance (c) level (d) flow (e) density. Ans: e

46. Units of surface tension are (a) energy/unit area (b) distance (c) both of the above (d) it has no units (e) none of the above. Ans: c

47. Which of the following meters is not associated with viscosity (a) Red wood (b) Say bolt (c) Engler (d) Orsat (e) none of the above. Ans: d

48. Choose the correct relationship (a) specific gravity = gravity x density (b) dynamic viscosity = kinematic viscosity x density (c) gravity = specific gravity x density (d) kinematic viscosity = dynamic viscosity x density (e) hydrostatic force = surface tension x gravity. Ans: b

49. Dimensions of surface tension are (a) MlL°T2 (b) MlL°Tx (c) MlL r2 (d) MlL2T2 (e) MlL°t. Ans:a

1 The capacity to do work is called as: A. Heat B. Energy C. work D. none of the above Ans: B

2 Heat is measured in: A. Joule B. Calorie C. both A and B D. Joule/second Ans: A It is measured in Joule .

3 1 cal. =? A. 1.2 joule B. 3.2 joule C. 4.2 joule D. none of the above Ans: C

4 The form of energy that produces feeling of hotness is called as: A. work B. Heat C. Energy D. none of the above Ans: B

5 With increase in temperature, heat will be: A. increase B. constant C. decrease D. double Ans: A Heat increase in temperature.