1The pressure inside a soap bubble of 50 mm diameter is 25 N/m2 above the atmospheric pressure. The surface tension in soap film would be

0.156 N/m

0.312 N/m

0.624 N/m

0.078 N/m

2)   A 150 mm diameter shaft rotates at 1500 rpm within a 200 mm long journal bearing with 150.5 mm internal diameter. The uniform annular space between the shaft and the bearing is filled with oil of dynamic viscosity 0.8 poise. The shear stress on the shaft will be

1.77 kN/m2

2.77 kN/m2

3.77 kN/m2

4.77 kN/m2

3) When the pressure on a given mass of liquid is increased from 3.0 MPa to 3.5 MPa, the density of the liquid increases from 500 kg/m3 to 501 kg/m3. What is the average value of bulk modulus of liquid over the given pressure range?

(a) 700 MPa

 b) 600 MPa

 c)500 MPa

 d)250 MPa

4) Below diagram shows the velocity distribution of fluid flow through a pipe. Flow is laminar. What is the ratio of maximum velocity to average velocity?

a) 1

b)2

c)3

d)3.14

5) What is the ratio of maximum velocity to average velocity, when the fluid is passing through two parallel plates and flow is laminar?

a. 3/2

b. 2/3

c. 4/3

d. ¾

6) What is the correct formula for loss at the exit of a pipe?

a. hL = 0.5 (V2 / 2g)

b. hL = (V2 / 2g)

c. hL = (2 V2 / g)

d. hL = (4 V2 / g)

7) If viscosity of fluid is more, the thickness of boundary layer is

a. more

b. less

c. not affected by change in viscosity

d. unpredictable

8) What is the correct formula for Euler's equation of motion?
Where,ρ = density of the fluid p = pressure force g = acceleration due to gravity v = velocity of the fluid

a. (∂p / ρ) + (∂g / ρ) + (∂v / ρ) = 0

b. (∂p / ρ) + (∂g / ρ) + (v dv) = 0

c. (∂p / ρ) + (g dz) + (v dv) = 0

d. (p dp) + (g dz) + (v dv) = 0

9) Which of the following devices does not use Bernoulli's equation as its working principle?

a. Venturimeter

b. Orifice-meter

c. c. Pitot tube

d. all the above

10) Friction factor for laminar flow is given by

a. (Re /64)

b. (64 / Re)

c. (Re / 16)

d. (16 / Re)

11) The imaginary line drawn in the fluid in such a way that the tangent to any point gives the direction of motion at the point, is called as

a. path line

b. streak line

c. filament line

d. stream line

12) oil with free stream velocity of 2m/s flows over a thin plate 2m wide and 2m long . Take specific gravity 0.86 and kinematic viscosity as 10^-5 m2/s. find out boundary layer thickness at trailing edge (in mm)

1.58

15.8

158

.158

13) oil with free stream velocity of 2m/s flows over a thin plate 2m wide and 2m long . Take specific gravity 0.86 and kinematic viscosity as 10^-5 m2/s. find out Reynolds number at trailing edge

4 * 10^5

2* 10^5

3 * 10^5

5 * 10^5

14) In which method of describing fluid motion, the observer remains stationary and observes changes in the fluid parameters at a particular point only?

Lagrangian method

Eulerian method

Stationary method

Particle mechanics tracking

15)The rate of increase of velocity with respect to change in the position of fluid particle in a flow field is called as

a. local acceleration

b. temporal acceleration

c. convective acceleration

d. local & convective

16)   Unlike the viscosity of liquids, the viscosity of gases increases with increasing temperature. This is due to

(a) Increased cohesive force between the molecules

(b) I nc reased momentum transfer in the molecules

(c) Decreased momentum transfer in the molecules

(d) Increases in both cohesive force and momentum transfer

17) two steel pipe of dia 'd1' an'd2' where d2=2d1 are dropped from rest at free surface of deep well. if there drag coefficient are independent on Reynolds number the ratio of their terminal velocity v1/v2

4:1

2:1

1:2

2:1

18) Pressure of liquid at throat of venturimeter --------that of inlet

Higher

Lower

Same

None of the above

19) Fluid is substance that

Cannot be subjected to shear forces

Always expands until it fills any container

Cannot remain at rest under action of any shear force

Has the same shear stress at a point regardless of its motion

20) If angle of contact of a drop of liquid is acute,then

(a) cohesion is equal to adhesion

(b) cohesion is more than adhesion

(c) adhesion is more than cohesion

(d) both adhesion an d cohesion have no connection with angle of contact

21) The linear momentum equation is

a scalar relation

an approximate relation for engg. Analysis

relation and application for incompressible fluid only

a vector relation

22) flow separation from sloid surface may take place if the flow is

viscous and positive stream wise pressure gradient

viscous and negative stream wise pressure gradient

in viscous and positive stream wise pressure gradient

in viscous and negative stream wise pressure gradient

23) when block of ice floating in water in a container melts, the level of water in the container

Rises

first falls then rises

remains same

falls

24) In a static liquid kept in liquid

the pressure is constant through out the liquid

the shear stress is zero through out the liquid

the shear stress increase as a depth from free surface.

the pressure decrease as the depth from free surface