Bernoulli's Equation is a mathematical expression of:

a) The ratio of kinetic to viscous forces in a flow stream

b) Friction loss as fluid moves through a rough pipe

c) Potential and kinetic energies in a flow stream

d) Fluid density and compressibility in a restriction

For accurate operation, orifice plate flowmeters require:

a)Laminar flow

b) turbulent flow

c) Swirls and eddies in the flow stream

d) Transitional flow

Hot wire anemometer is used to measure_____?

a) discharge

b) velocity of gas

c) pressure intensity of gas

d) pressure intensity of liquid

Which of the following is a direct method of level measurement?

a) Laser level Sensor

b) Air purge system

c) Ultrasonic level detector

d) Sight glass system

Bourdon tube is used for the measurement of gauge pressure of

a) Gas

b) Liquid fluid

c) Solid

d) Both (a) and (b)

In closed container type level measuring system, pressure at top of container is due to _____

a) Vacuum pressure

b) Vapor pressure

c) Liquid pressure d) Atmospheric pressure
Which of the following devices are used for a level to force conversion? a) Load cell b) Membrane c) Diaphragm d) Voltmeter
The ionization gauge an instrument used for the measurement of A. Very low pressure B. Medium pressure C. High pressure D. Very high pressure
Dipsticks are used for the A. Pressure measurement B. Flow measurement C. Displacement measurement D. Level measurement

1. If the displacement is measured with strain gauge then the number of strain gauge normally required are

A. One
B. Two
C. Three
D. Four

2. A capacitive pressure sensor has a typical measurement uncertainty of

A. ± 0.2%
B. ± 0.4%
C. ± 0.1%
D. ± 0.8%

3. The instruments used for the measurement of pressure is/are

A. Bellows
B. Diaphragms
C. Fiber optic pressure sensors
D. All of these

4. Bourdon tube is used for the measurement of gauge pressure of

A. Gas
B. Liquid fluid
C. Solid
D. Both (a) and (b)

5.Dead weight gauge is used for the measurement of pressure of

A. About 1000 bar
B. About 2000 bar
C. About 5000 bar
D. About 7000 bar

6. The ionization gauge an instrument used for the measurement of

A. Very low pressure
B. Medium pressure
C. High pressure
D. Very high pressure

7. When visual indication of pressure level is required then the instrument generally used is

A. Monometers
B. Diaphragm sensors
C. Bourdon tube
D. Resonant wire device

8. For the measurement of high pressure with high accuracy the device used is

A. Manganin wire pressure
B. Ionization gauge
C. Dead weight gauge
D. Bourdon tubes

9.Advantage of passive instrument is

A. It does not need power supply
B. Cheap
C. Sensitive
D. Accurate

10.Dipsticks are used for the

A. Pressure measurement
B. Flow measurement
C. Displacement measurement
D. Level measurement

11.The most common application of float system is

A. To monitor the fuel tank level in motor vehicle
B. To monitor the flow of solid
C. To monitor the flow of liquid
D. All of these

12.Capacitive devices are used for the level measurement of

A. Only liquid
B. Solid in powdered form
C. Both (a) and (b)
D. None of these

13.In ultrasonic level gauge, the ultrasonic source is placed at the

A. Bottom of the vessel containing the liquid
B. Top of the vessel containing the liquid
C. Middle of the vessel containing the liquid
D. Far from the vessel containing the liquid

14.If the ambient temperature is doubled and pressure fluctuates, then the transmission time of radar through air is

A. Almost unaffected and remains same
B. Increases
C. Decreases
D. None of these

15.In radiation methods, the detector system is located at

A. The top of the liquid filled tank
B. The bottom of liquid filled tank
C. Middle of the liquid filled tank
D. Outside a liquid filled tank

A vibrating level sensors consists of

16.A. One piezoelectric oscillators
B. Two piezoelectric oscillators
C. Three piezoelectric oscillators
D. Four piezoelectric oscillators

17.Contact devices used for the measurement of level are

A. Less reliable then devices which does not make contact with the material

B. More reliable then devices which does not make contact with the material

C. Less reliable then devices which makes contact with the material

D. More reliable then devices which makes contact with the material

18.In fibre-optic level sensors, the amount of light loss depends on

A. The proportion of cable that is submerged in the liquid

B. Amount of light which is reflected back

C. The proportion of cable that is not in the liquid

D. Amount of light which is not reflected back

19. Which of the following conversions take place in float element?
    a) Level to force
    b) Level to voltage
    c) Level to displacement
    d) None of the mentioned
20. In _____ system, float whose weight greater than liquid to be displaced is used.
    a) Inverse float system
    b) Displacer system
    c) Magnifying float system
    d) None of the mentioned
    21. For float element, uniformity of density is important.
    a) True
    b) False
    22. Which of the following is correct for a level to force conversions?
        a) Liquid at constant density distribution
        b) Liquid with different density distribution
        c) Level difference should be gradual
        d) Liquid should be highly viscous
    23.Which of the following devices are used for a level to force conversion?
    a) Load cell
    b) Membrane
    c) Diaphragm
    d) Voltmeter
    24. Diaphragm element is used for a level to pressure conversion.
    a) True
    b) False
    25. In closed container type level measuring system, pressure at top of container is due to _____
    a) Vacuum pressure
    b) Vapor pressure
    c) Liquid pressure
    d) Atmospheric pressure

26.What will happen if the float becomes lighter?
a) Density variations become more important
b) Density variations become less important
c) System becomes less efficient
d) None of the mentioned

Question Bank (4 Marks)

Discuss the construction and working of flowmeter using Orifice Plate
With a neat a sketch, discuss why Transit-time flowmeters are better that ultrasonic flow meter. Give the flow rate equation for both type.
What are the types of mechanical tachometer? Explain Centrifugal tachometer.
Explain briefly about the different types of displacement measurement with neat sketch.
How the vibration quantity is measured? Explain anyone of the method briefly.
List out the applications of sensor in industries.

Question Bank (12 Marks)

a) List out the methods to measure hydrostatic pressure. Explain any two with neat diagram.

b) Illustrate the construction and working of Manometer

c) Discuss in detail about the flow measurement with neat sketch.

d) Describe the different types of pressure measurement in detail.