

## 6. Dynamics of Fluid Flow

- Application of Bernoulli's eq<sup>n</sup> Requires that (chatt-JE-08)
  - The duct is 2-D
  - The Flow is laminar
  - The duct is frictionless
  - The Flow is inviscous and Incompressible.
- Bernoulli's equation with <sup>deal</sup> (UKDJE-08 + SSCJE-7 + DMRC-JE-13 + Raj JE-16) + SJVNL-AE-13)
  - mass
  - momentum
  - energy
  - None
- The term  $\frac{V^2}{2g}$  is (UKDJE-08)
  - Kinetic ~~head~~ energy
  - Pressure ~~head~~
  - Kinetic energy/unit weight
  - None
- A Pitot tube is used for measuring (UKDJE-08) + (SSCJE-09) + (UPSSSCJE-16)
  - velocity of flow
  - Pressure of flow
  - Flow Rate
  - Total energy
- Which of the following assumption of Bernoulli theorem is Not correct (SSCJE-08) + (MP-JE-11)
  - Flow should be unsteady
  - Flow should be continuous
  - Flow should be compressible
  - Flow should be frictionless
- Venturimeter is used to measure Flow of Fluid in pipes when Pipe is (SSCJE-09) + (UJVNLJE-16) + (SSC-16)-16)
  - Horizontal
  - velocity
  - Inclined
  - Any position
- Piezometer is used to measure (SSCJE-10)
  - Pressure in pipe, channel etc
  - Atmospheric Pressure
  - very low pressure
  - Difference of Pressure Between two points.
- In a Pipe, Flow of Fluid take Place from (UPRVUNL-JE-14)
  - High to Low level
  - high Pr to low Pr
  - high to low energy
  - Low level to high level
- The Velocity of Fluid Flowing through the divergent portion of a venturimeter. (UKD-JE-13)
  - Increase
  - decrease
  - Const
  - None

10. Bernoulli's equation can be derived from (UKO JE-13)
- Continuity eq<sup>n</sup>
  - Newton's law of viscosity
  - Reynold theorem
  - Euler's equation.
11. A Piezometer can't be used for pressure measurement in pipe when (IOF-JE-14)
- Pressure difference is low
  - Velocity is high
  - Fluid in the pipe is gas.
  - Fluid is highly viscous.
12. Which one is the Application of Bernoulli equation (DMRC JE-13) + (UPSSSC JE-16)
- venturimeter
  - orifice meter
  - Pitot tube
  - All
13. In Pitot-tube the velocity of flow at a point is reduced to 0. That point is called as (SSC JE-14)
- stagnation point
  - critical point
  - metacentre
  - equilibrium point
14. A liquid flow from level  $z_1$ , pressure  $P_1$  to a higher level  $z_2$ , pressure  $P_2$ . It can be concluded. (SSC JE-14)
- 1<sup>st</sup> law of thermal violated
  - 2<sup>nd</sup> law of thermal violated
  - $z_2 < z_1$
  - $P_2 < P_1$
15. The length of the divergent part of venturimeter in comparison to convergent portion is. (SSC JE-14) + (UPJVNL-JE-16)
- same
  - more
  - less
  - depend upon type of flow.
16. Each term of Bernoulli's equation stated in the form  $\frac{P}{\rho g} + \frac{V^2}{2g} + Z = \text{const}$  has unit of (SSC JE-11)
- N
  - mN/kg
  - m
  - mN/s.
17. Which one of the following flow measurement device is independent of density. (MP-JE-16)
- Electromagnetic flow meter
  - orificemeter
  - Turbine
  - venturimeter
18. Energy loss in flow through nozzle as compared to venturimeter is (UPRVUNL-JE-15) + (UPSSSC JE-16)
- same
  - more
  - less
  - None.
19. The length of converging section of venturimeter is. (UPSSSC JE-16)
- 2.7(D-d)
  - 2.7(D+d)
  - 2.7
  - None



- Which of the following Parameter is measured using orifice (UPRVNL JE-14) + (MPJE-15) + (SSC-15)
- 1) a) Velocity b) Pressure c) Rate of Flow d) Both Pressure and Velocity
- 2) A Rotameter is a device used to measure (UPRVNL JE-15) + (IP-15) + (SJVNL AE-13)
- a) Velocity b) Velocity of gauge c) Rotex Flow d) Flow of Fluids.
- 3) Coefficient of discharge,  $C_d$  is equal to (UPSSSC JE-16)
- a)  $C_v \times C_c$  b)  $C_v \times C_r$  c)  $C_v + C_c$  d)  $C_v - C_v$
- 4) Flow of water in a pipe about 3 meter in dia can be measure by
- a) orifice meter b) venturimeter c) pitot tube d) Nozzle.
- 5) According to Bernoulli equation (SSC JE-15)
- a)  $Z + \frac{P}{\rho} + \frac{V^2}{2g} = \text{Const}$  b)  $Z + \frac{P}{\rho} - \frac{V^2}{2g} = \text{Const}$
- c)  $Z - \frac{P}{\rho} + \frac{V^2}{2g} = \text{Const}$  d)  $Z - \frac{P}{\rho} - \frac{V^2}{2g} = \text{Const}$ .
- 6) A venturimeter is preferred to an orifice plate because (SJVNL-AE-13)
- a) Its cheaper b) Its easy to install c) energy loss is less
- d) it has very high life.
- 7)

your future begins here....

Key.

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|-------|-------|--------|--------|--------|--------|
| 1 - d | 5 - c | 9 - b  | 13 - a | 17 - a | 21 - d |
| 2 - c | 6 - d | 10 - d | 14 - d | 18 - a | 22 - a |
| 3 - c | 7 - a | 11 - d | 15 - b | 19 - a | 23 - c |
| 4 - a | 8 - c | 12 - d | 16 - c | 20 - c | 24 - a |
|       |       |        |        |        | 25 - a |