## Evernon <br> CIVIL ENGINEERING

## QUESTION PRACTICE PROGRAM

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Q : ) The variation in the volume of a liquid with the change of pressure is called its: [ NWDA JE 2019]

A : Surface tension
B : Capillarity
C: Viscosity
D : Compressibility

Q : ) For a circular water tank of 6 m diameter and 4 m height resting on the ground and having flexible joints between the floor and the wall the maximum hoop tension will be developed at: [ Civil ESIC JE 2019]

A : The Bottom edge
B : 1.6 m from the bottom
$C$ : The top edge
D : 2 m from the bottom

Q: ) Two Horizontal plates are placed 2 cm apart, the space between them being filled with oil of viscosity 10 Poise. If the upper plate is moved with a velocity of $2 \mathrm{~m} / \mathrm{s}$, the shear stress in the oil would be: [ M.P Sub Engg 2018]

A: 300N/m ${ }^{2}$
B: $150 \mathrm{~N} / \mathrm{m}^{2}$
C: $200 \mathrm{~N} / \mathrm{m}^{2}$
D: 100N/m²

Q : ) In the given figure which nature of fluid is represented by curve A? [ UPPCL JE, 2015]


A: Newtonian
B : Pseudo
C: Dilatant
D : Ideal Bingham plastic

Q : ) Match list - I With List - II and choose the correct answer from the options below.

| List - I | List - II |
| :--- | :--- |
| A. Compressibility | 1. Flow of real fluid past a tiny sphere |
| B. Gravity | 2. Cavitation |
| C. Viscosity | 3. Hydraulic jump |
| D. Vapour Pressure | 4. Flight of surpersonic aircraft |

Codes:
A: A-3, B-4, C-2, D-1
B:A-3, B-4, C-1, D-2
C: A-4, B-3, C-1, D-2
D:A-4, B-3, C-2, D-1

Q:) The motion of air mass in a tornado is a
A : Free vortex motion
B : Forced vortex motion
C : Free vortex at center and forced vortex outside
D : Forced vortex at centre and free vortex outside

Q: ) An iceberg floats in sea water with $14 \%$ of its volume projecting above the sea surface. If the specific weight of sea water is $10400 \mathrm{~N} / \mathrm{m}^{2}$ Determine specific weight of the iceberg (in $\mathrm{N} / \mathrm{m}^{2}$ ) [ SSC JE 2019]

A: 8836
B : 8314
C: 9125
D: 8944

Q : ) The force exerted by a static fluid on a vertical horizontal or an inclined plane surface that is immersed depends on the. [ NWDA JE 2019]

A : Density of the liquid only
$B$ : Area of the immersed surface
$C$ : Density of the liquid, area of immersed surface and depth of the centre of gravity of the immersed surface

D : Density of the liquid and Area of the immersed surface

Q : ) When a force is exerted by a flowing fluid on a stationary body, the component of the total force in the direction perpendicular to the direction of motion is known as [ BSPHCL JE Civil 2019]

A: Drag
B: Lift
C: Shear
D:Stress

Q : ) Condition of stable equilibrium of submerged body: [ LMRC JE 2018 ]
A : Weight of body is equal to buoyancy force \& buoyancy point is above the center of gravity

B : Buoyancy force should be in between the center of gravity and buoyancy point

C : Buoyancy force should be below the center of gravity
D : Buoyancy force coincide with center of gravity

Q : ) A rectangular plate $0.75 \mathrm{~m} \times 2.4 \mathrm{~m}$ is immersed in a liquid of relative density of 0.85 with its 0.75 m side horizontal and just at the water surface. If the plane of the plate makes an angle of $60^{\circ}$ with the horizontal, then the pressure on one side of the plate is ........
[ M.P Sub Engg 2018]
A: 7.8 kN
B : 15.6 kN
C: 18.0 kN
D : 27.0 kN

Q : ) If atmospheric pressure is $1.03 \mathrm{~kg} / \mathrm{cm}^{2}$ and absolute pressure at a point is $1.05 \mathrm{~kg} / \mathrm{cm}^{2}$ then what would be the gauge pressure at that point
[ UPPCL JE 2013 ]
A: $20 \mathrm{~kg} / \mathrm{cm}^{2}$
B: $0.02 \mathrm{~kg} / \mathrm{cm}^{2}$
C : $2.08 \mathrm{~kg} / \mathrm{cm}^{2}$
D : $1.05 \mathrm{~kg} / \mathrm{cm}^{2}$

Q: ) When a fluid mass rotates without any external force being impressed on it, then it is called as: [ DDA JE 2018 ]

A : Forced vortex motion
B : Turbulence
C : Free vortex motion
D: Cyclone

Q: ) For a flow the velocity components are given by $u=\left(\lambda x y^{2}-x^{3}-y^{2}\right)$ and $v=\left(x^{2} y^{3}-3 y^{3}\right)$. What is the value of $\lambda$ for the possible flow field which includes steady incompressible flow? [ SSC JE 2018]

A: 3
B: 5
C: 7
D: 9

Q : ) For a two dimensional flow, the stream function is given by $\Psi=2 \mathrm{xy}$. The velocity at a point $(3,4)$ is equal to [ UTTRAKHAND AE 2013]

A : 6m/sec
B: 8m/sec
C: $10 \mathrm{~m} / \mathrm{sec}$
D: 12m/sec

Q: ) In laminar flow between parallel plates, the ratio maximum velocity and average velocity of flow is [ UTTRAKHAND AE 2013 ]

A: 2
B: 1.33
C:1.5
D:1

Q : ) In a venturimeter, to avoid flow separation, angle divergence should not be greater than: [ UPPCL JE 2016]

A: $3^{0}$
B: $7^{0}$
C: $12^{0}$
D: $20^{\circ}$

Q : ) If time taken ( $T$ ) to close the valve is less than $2 \mathrm{~L} / \mathrm{c}$ then the valve closure is said to be: [ LMRCL (ASST. MANAGER) 2018 ]

A : Sudden
B : Gradual
C: Leakage
D : Water tight

Q : ) The Discharge through a venturimeter is given as (with usual natation):
[ Uttrakhand JE Paper II, 2015,
UK Combined AE Paper - I, 2012,
UKPSC AE Paper - I, 2007]

$$
\begin{aligned}
& \text { A }: Q=C_{d} A_{1}^{2} A_{2}^{2} \sqrt{2 g h} / \sqrt{A_{1}^{2}-A_{2}^{2}} \\
& \text { B }: Q=C_{d} A_{1} A_{2} \sqrt{2 g h} / \sqrt{2 A_{1}^{2}-A_{2}^{2}} \\
& \text { C }: Q=C_{d} A_{1} A_{2} \sqrt{2 g h} / \sqrt{A_{1}^{2}-A_{2}^{2}} \\
& \text { D }: \text { None of the above }
\end{aligned}
$$

