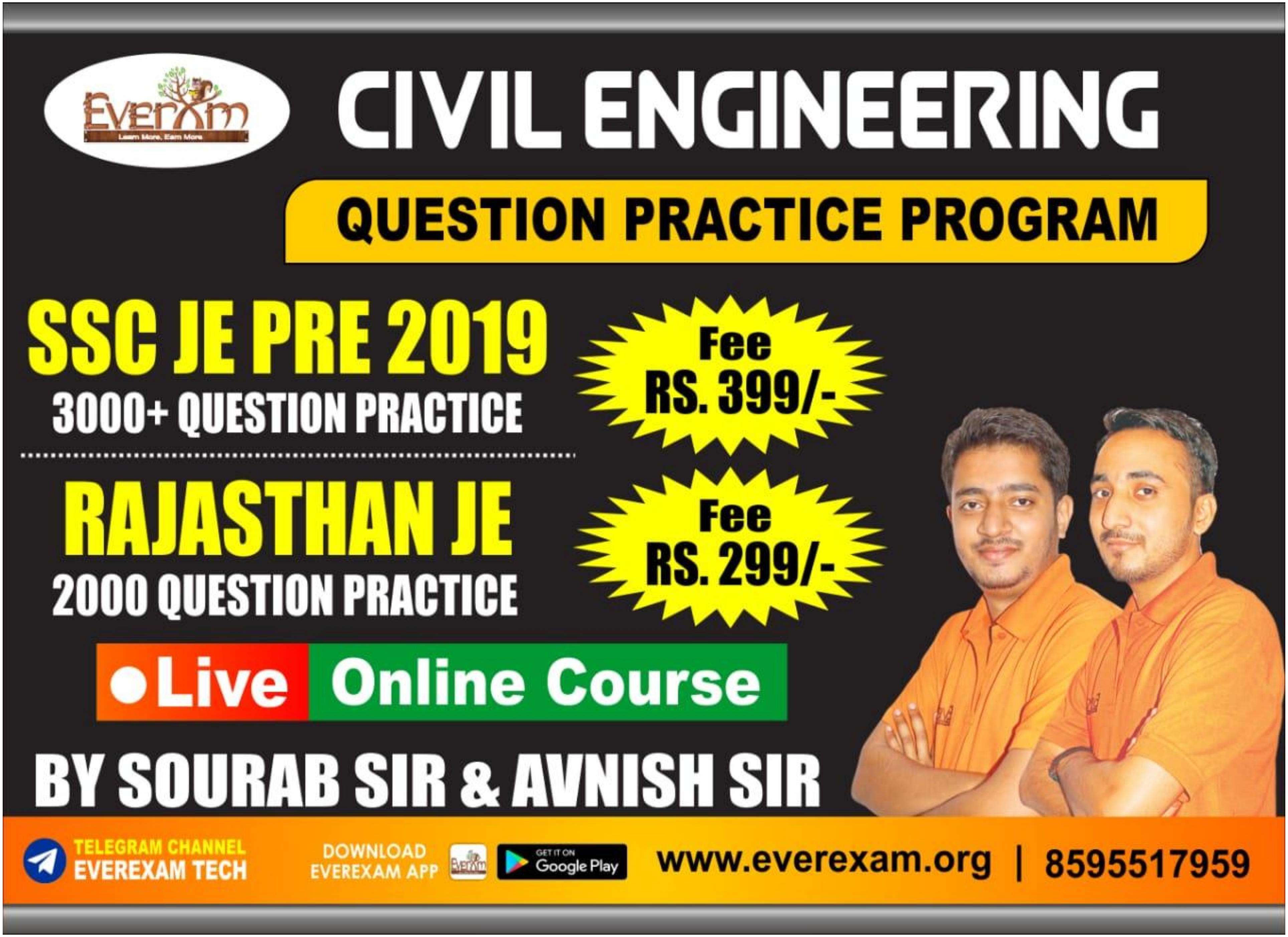

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Q:) For a sphere of radius 15 cm moving with a uniform velocity of 2 m/sec through a liquid of specific gravity 0.9 and dynamic viscosity 0.8 poise, the Reynolds number will be

A : 300

B : 337.5

C : 600

D : 675

Q:) Stanton diagram is a

A : Log-log plot of friction factor against Reynolds number

B : Log-log plot of relative roughness against Reynolds number

C : Semi-log plot of friction factor against Reynolds number

D : Semi-log plot of friction factor against relative roughness

Q:) The distance y from pipe boundary, at which the point Velocity is equal to average velocity for turbulent flow, is where R is radius of pipe.

A : 0.223 R

B : 0.423 R

C : 0.577 R

D : 0.707 R

Q:) If a sphere of diameter 1 cm falls in castor oil of kinematic Viscosity 10 stokes, with a terminal velocity of 1.5 cm/sec, The coefficient of drag on the sphere is

A : Less than 1

B : Between 1 and 100

C : 160

D : 200

Q:) When an ideal fluid flows past a sphere,

A : Highest intensity of pressure occurs around the circumference At right angles to flow

B : Lowest pressure intensity occurs at front stagnation point

C : Lowest pressure intensity occurs at rear stagnation point

D : Total drag is zero

Q:) For hydro-dynamically smooth boundary, the friction Coefficient for turbulent flow is

A : Constant

B : Dependent only on Reynolds number

C : A function of Reynolds number and relative roughness

D : Dependent on relative roughness only

Q:) For laminar flow in a pipe of circular cross- section, the Darcy`s friction factor f is

A : Directly proportional to Reynolds number and independent of Pipe wall roughness

B : Directly proportional to pipe wall roughness and independent Of Reynolds number

C : Inversely proportional to Reynolds number and independent of Pipe wall roughness

D : Inversely proportional to Reynolds number and directly proportional to pipe wall roughness.

Q:) Separation of flow occurs when

A : The pressure intensity reaches a minimum

B : The cross-section of a channel is reduced

C : The boundary layer comes to rest

D : All the above

Q:) The loss of energy due to sudden enlargement is given by

A : $\frac{V_2^2}{2g}\left(\frac{A_2}{A_1}-1\right)^2$

B : $\left(\frac{V_1-V_2}{2g}\right)^2$

C : $\left(\frac{V_1^2-V_2^2}{2g}\right)^2$

D : $\frac{V_1^2}{2g}\left(1-\frac{A_2}{A_1}\right)^2$

Where A_1 ,V_1 are area of cross-section and velocity at entry and A2 ,V2 , are area of cross-section and velocity at exit

Q:) The ratio of average velocity to maximum velocity for Steady laminar flow in circular pipes is

A : 43862

B : 43892

C : 43864

D : 2

Q:) The distance from pipe boundary, at which the turbulent Shear stress in one-third the wall shear stress, is Where R is the radius of pipe

A : 1/3 R

B : 1/2 R

C : 2/3 R

D : 3/4 R

Q:) The discharge of a liquid of kinematic viscosity 4 cm^2 /sec through a 8 cm diameter pipe is 3200π cm^3 /sec. the type of flow expected is

A : Laminar flow

B : Transition flow

C : Turbulent flow

D : Not predictable form the given data

Q:) The prandt l maximum length is

A : Zero at the pipe wall

B : Maximum at the pipe wall

C : Independent of shear stress

D : None of the above

Q:) The velocity distribution for laminar flow through a Circular tube

A : Is constant over the cross-section

B : Varies linearly from zero at walls to maximum at centre

C : Varies parabolic ally with maximum at the centre

D : None of the above

Q:) A fluid of kinematic viscosity 0.4 cm^2 /sec flows through A 8 cm diameter pipe. The maximum velocity for laminar Flow will be

A : Less than 1m/sec

B : 1m/sec

C : 1.5m/sec

D : 2m/sec

Q:) The speed of a pressure wave through a pipe depends upon

A : The length of pipe

B : The viscosity of fluid

C : The bulk modulus for the fluid

D : The original head

Q:) The length of a pipe is 1 k and its diameter is 20 cm. If the diameter of an equivalent pipe is 40 cm, then its length is

A : 32 km

B : 20 km

C : 8 km

D : 4 km

Q:) A fluid of kinematic viscosity 0.4 cm^2 /sec flows through A 8 cm diameter pipe. The maximum velocity for laminar Flow will be

A : Less than is

B : Between d and 1.5 d

C : Between 1.5 and 2d

D : Grater than 2d

Q:) The boundary layer thickness at a distance of 1 m from The leading edge a flat plate, kept at zero angle of incidence to the flow direction, is 0.1 cm. the velocity outside the boundary layer is 25 m/sec. the boundary layer thickness at a distance of 4 m is assume that Boundary layer is entirely laminar.

A : 0.40 cm

B : 0.20 cm

C : 0.10 cm

D : 0.05 cm

Q:) Which one of the following velocity fields represents A possible fluid flow ?

A : $u = x; v=y$

B : $u = x^2 ; v=y^2$

C : $u = xy; v=x^2 y^2$

D : $u = x; v= -y$

Q:) A harbor model has a horizontal scale of 1/150 and a vertical scale of 1/60.the interval between successive high tides in the model will be nearly

A : 90 min

B : 40 min

C : 15 min

D : 5 hours

Q:) A model of reservoir is emptied in 10 minutes. If the Model scale is 1:25, the time taken by the prototype to empty itself, would be

A : 250 minutes

B : 50 minutes

C : 6250 minutes

D : 2 minutes

Q:) A value is suddenly closed in a water main in which the velocity is 1 m/sec the inertia head at the value will be

A : 1 m

B : 10 m

C : 100 m

D : None of the above