Q :) Draft tubes are used is which type of turbine [DMRC 2020]

A : Francis turbine

B : Runoff river turbine

C : Pelton turbine

D : Savonious turbine

Q :) A propped cantilever beam of span L is subjected to Uniformly Distributed Load of w kN/m throughout the span. What is the distance of Point of Contraflexure from the Fixed end? [GPSC AE 2020]

A : 0.175L

B : 0.25L

C : 0.33L

D : 0.375L

Q :) A simply supported beam of span L, width B and depth D is subjected to a rolling concentrated load of magnitude W. The maximum flexural stress developed at the section L/4 distance from the end support is
[GPSC AE 2020]

A : $(3WL)/(4BD^2)$

B : $(4WL)/(3BD^2)$

C : $(9WL)/(8BD^2)$

D : $(8WL)/(9BD^2)$

Q :) The maximum compressive strain in concrete in axial compression should be taken as _____. [LMRC AE 2020]

A : 0.02

B : 0.002

C : 2

D : 0.2

Q :) If the angle between two equal forces is zero degree, their resultant will be _____. [LMRC AE 2020]

A : 0.2 P

B : Zero

C : 2 P

D : 0.5 P

Q :) If a water tank, partially filled with water is being carried on a truck, moving with a constant horizontal acceleration, the level of water in the tank; [JPSE 2020]

A : rise and fall alternately on the front side of the tank

B : fall on rear side of the tank

C : remain the same on both sides of the tank

D : rise on the rear side and fall on the front side of the tank

Q :) S-hydrograph is used to obtain unit hydrograph of [JPSE 2020]

A : shorter duration from longer duration

B : longer duration from shorter duration

C : Both (A) and (B)

D : None of these

Q :) An ideal flow of a liquid obeys [ISRO 2020]

A : Continuity equation

B : Newton’s law of viscosity

C : Newton’s second law of motion

D : Dynamic viscosity law

Q :) A pipe contains an oil of specific gravity 0.9. A differential manometer connected at the two points A and B shows a difference in mercury levels as 15 cm. The difference of pressure at the two points A and B will be (Note : consider the density of mercury as 13600 kg/m^3) [ISRO 2020]

A : 18688 N/m^2

B : 15981 N/m^2

C : 288 N/m^2

D : 6528 N/m^2

Q :) Shear reinforcement is required to prevent propagation of _____.
[UPPCL 2020]

A : Flexural cracks

B : Dowel crack

C : Splitting crack

D : Diagonal cracks

Q :) Rankine's Theory is also known as: [UPPCL 2020]

A : Maximum distortions energy theory

B : Maximum shear stress theory

C : Maximum Principal stress theory

D : Maximum strain energy theory

Q :) A point in a strained material is subjected to two mutually perpendicular stresses of 150 MPa (tensile) and 50 MPa (compressive), then what will be the magnitude of maximum shear stress in the component? [MPSC PAPER-I 2019]

A : 50 MPa

B : 100 MPa

C : 150 MPa

D : 200 MPa

Q :) Euler's formula for buckling of column does not hold good if slenderness ratio $\left(\frac{le}{K}\right)$ is _____ for mild steel column.

[MPSC PAPER-I 2019]

A : Less than 80

B : Greater than 90

C : 120 - 160

D : 90 – 120

Q :) Maximum deflection of a simply supported beam with the total uniformly distributed load ‘W’ is: [MPSC PAPER-I 2019]

A : $\frac{Wl^3}{384\,EI}$

B : $\frac{5}{384}\,\frac{Wl^3}{EI}$

C : $\frac{Wl^3}{48\,EI}$

D : $\frac{5}{48\,EI}\,\frac{Wl^3}{EI}$

Q :) If S_y = Specific yield and S_r = Specific retention, then

[MPSC PAPER- II 2019]

A : $S_y + S_r = 0.50$

B : $S_y + S_r$ = Porosity

C : $S_y + S_r = 1.0$

D : $S_y + S_r$ = Permeability

Q :) In case of gravity dams, the factor of safety against over turning should not less than [MPSC PAPER- II 2019]

A : 1.00

B : 1.10

C : 1.25

D : 1.50

Q :) In reinforced cement concrete construction, lap splices are not recommended to be used for rebars when the bar diameter is more than: [CIL 2016-17]

(a): 36 mm

(b): 25 mm

(c): 32 mm

(d): 30 mm

Q :) What shall be the minimum effective throat thickness of a fillet weld in case of structural steel design? [CIL 2016-17]

(a): 4 mm

(b): 3 mm

(c): 5 mm

(d): 2 mm