Q : Maximum shear stress theory for the failure of a material at the elastic limit is known as

A : Guest's or Tresca's theory
B : St. Venant's theory
C : Rankine's theory
D : Haigh's theory

Q : Principal planes are subjected to_____.

A : Normal stresses only
B : Tangential stresses only
C : Normal stresses as well as tangential stresses
D : None of these

Q : For the rectangular beam, the maximum shear stress is related to average shear stress

A : τ_{av}
B : $1.25\tau_{av}$
C : $1.50\tau_{av}$
D : $1.75\tau_{av}$

Q : A circular shaft can transmit a torque of 5KN-m.If the torque is torque to 4 KN-m, then the maximum value of bending moment that can be applied to the shaft is

A : 1 KN-m
B : 2 KN-m
C : 3 KN-m
D : 4 KN-m

Q : A bar of square section of area (a^2) is held such that one of its diameter is vertical. The maximum shear stress will develop at distance h where h is

A : $\frac{(2\sqrt{3})}{4}a$
B : $\frac{3}{4\sqrt{2}}a$
C : $\frac{2}{\sqrt{3}}$a
D : $\frac{\sqrt{3}}{4a}$

Q : Which of the following is a non-recording rain-gauge?

A : Symon's rain-gauge
B : Tipping bucket type rain-gauge
C : Weighing type rain-gauge
D : Floating type rain-gauge

Q : Calculate the runoff (cm) form a rainfall of 3 hours. The intensity of the rainfall is 2 cm/hr. The evaporation and infiltration losses are 8 mm and 16 mm.

A : 1.2
B : 2.8
C : 3.6
D : 6.8

Q : What the rainfall in intensity (mm/hr) according to the formula given by British Ministry of Health, if the time of concentration is 540 second?

A : 20
B : 30

C : 40
D : 50

Q : Which of the following statement is true for the linear reservoir?

A : Strong proportional to inflow discharge
B : Strong is proportional to outflow discharge
C : Strong is p to square of inflow discharge
D : Strong proportional to square of outflow discharge

Q : Clay is an example of

A : Aquifer
B : Aquitard
C : Aquifuge
D : Aquiclude

Q : Maximum size of a fillet weld for a plate of square edge is:

A : 1.5 mm less than thickness of the plate.
B : One-half of the thickness of the plate
C : Thickness of the plate itself
D : 1.5 mm more than the thickness of the plate

Q : The maximum slenderness ratio for tension member shall not exceed:

A : 180
B : 300
C : 350
D : 400

Q : A single angle in tension is connected by one leg only. If the area of connecting and outstanding legs are respectively a and b, then what is the net effective area of the angle?

A. $\frac{a-b}{1+0.35\frac{b}{a}}$
B. $\frac{a+b}{1+0.35\frac{b}{a}}$
C. $\frac{a-b}{1+0.02\frac{b}{a}}$
D. $\frac{a+b}{1+0.02\frac{b}{a}}$

A : Only A
B : Only B
C : Only C
D : Only D

Q : As per the code, the slenderness ratio of the lacing bars for compression member should not exceed:

A : 80
B : 100
C : 145
D : 225

Q : As per IS:800-1984, the lacing of compression member shall be proportional to resist a total transverse shear 's' equal to at least

A : 1.0% of axial load
B : 2.0% of axial load
C : 2.5% of axial load
D : 3.0% of axial load

Q : For simply supported beams, the maximum permitted deflected is

A : 1/325 of the span
B : 1/300 of the span
C : 1/350 of the span
D : None of these

Q : If l_1 and l_2 and are the lengths of long and short spans of a two way slab simply supported on four edges and carrying a load w per unit area, the ratio of the loads split into and w_2 acting on strips parallel to l_2 and l_1 and is

A : $\frac{w_1}{w_2} = \frac{l_2}{l_1}$
B : $\frac{w_1}{w_2} = \left(\frac{l_2}{l_1}\right)^2$
C : $\frac{w_1}{w_2} = \left(\frac{l_2}{l_1}\right)^3$
D : $\frac{w_1}{w_2} = \left(\frac{l_2}{l_1}\right)^4$

Q : If the ratio long and short spans of a two way slab with corners held down is r, the actual reduction of B.M. is given by

A : $\frac{5}{6}\frac{r}{1+r^2}M$
B : $\frac{5}{6}\frac{r^2}{1+r^2}M$
C : $\frac{5}{6}\frac{r^2}{1+r^3}M$
D : $\frac{5}{6}\frac{r^2}{1+r^4}M$

Q : According to IS:456,slabs which span in two directions with corners held down are assumed to be divided in each direction into middle strips and edge strips such that the width of the middle strip is_____.

A : Half of the width of the slab
B : Two-third of the width of the slab
C : Three-fourth of the width of the slab
D : Four-fifth of the width of the slab

Q : Design of a two-way slab simply supported on edges and having no provision to prevent the corners from lifting,is made by-

A : Rankine formula
B : Marcus formula
C : Rankine Grashoff formula
D : Grashoff formula