Question:1 For a continuous slab of 3m x 3.5m size, the minimum overall depth of slab to satisfy vertical deflection limit is:

OP 1 : 5 cm
OP 2 : 7.5 cm
OP 3 : 10 cm
OP 4 : 15 cm

Question : 2 The length of a cranked bar through a distance (d) at 45◦45◦ in case of a beam of effective length L, and depth (d) is

OP 1 : L + 0.42d
OP 2 : L + x 0.42d
OP 3 : L - 0.42d
OP 4 : L - 2 x 0.42d

Question : 3 If the size of panel in a flat slab is 6 m x 6m, then as per Indian Standard code, the widths of column strip and middle strip are-

OP 1 : 3.0 m and 1.5 m
OP 2 : 1.5 m and 3.0 m
OP 3 : 3.0 m and 3.0 m
OP 4 : 1.5 m and 1.5 m

Question:4 If l_1 and l_2 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 is

OP 1 : $\frac{w_1}{w_2} = \frac{l_2}{l_1}$
OP 2 : $\frac{w_1}{w_2} = \left(\frac{l_2}{l_1}\right)^2$
OP 3 : $\frac{w_1}{w_2} = \left(\frac{l_2}{l_1}\right)^3$
OP 4 : $\frac{w_1}{w_2} = \left(\frac{l_2}{l_1}\right)^4$

Question : 5 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

OP 1 : $\frac{5}{6}\frac{r}{1+r^2}M$
OP 2 : $\frac{5}{6}\frac{r^2}{1+r^2}M$
OP 3 : $\frac{5}{6}\frac{r^2}{1+r^3}M$
OP 4 : $\frac{5}{6}\frac{r^2}{1+r^4}M$

Question : 6 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_____.

OP 1 : Half of the width of the slab
OP 2 : Two-third of the width of the slab
OP 3 : Three-fourth of the width of the slab
OP 4 : Four-fifth of the width of the slab

Question : 7 If the sides of a slab simply supported on edges and spanning in two directions are equal, the maximum bending moment is multiplied by

OP 1 : 0.2
OP 2 : 0.3
OP 3 : 0.4
OP 4 : 0.5

Question : 8 Design of a two-way slab simply supported on edges and having no provision to prevent the corners from lifting,is made by-

OP 1 : Rankine formula
OP 2 : Marcus formula
OP 3 : Rankine Grashoff fromula
OP 4 : Grashoff fromula

Question : 9 The diameter of the column head support a flat slab, is generally kept____.

OP 1 : 0.25 times the span length
OP 2 : 0.25 times the diamter of the column
OP 3 : 4.0 cm larger than the diameter of the column
OP 4 : 5.0 cm larger than the diameter of the column

Question : 10 The effective width of a column strip of a flat slab is taken as:

OP 1 : One fourth the width of the panel
OP 2 : Half the width of the panel
OP 3 : Half the diameter of the column
OP 4 : The diameter of the column

Question : 11 For a circular slab carrying a uniformly distribute load , the ratio of the maximum negative to maximum positive radial moment is

OP 1 : 1
OP 2 : 2
OP 3 : 3
OP 4 : 4

Question : 12 For a ribbed slab:

OP 1 : Clear spacing between ribs shall not be greater than 4.5 cm
OP 2 : Width of the rib shall not be less than 7.5 cm
OP 3 : Overall depth of the slab shall not exceed four times the breadth of the rib
OP 4 : All option are correct

Question : 13 If the length of an intermediate span of a continuous slab is 5m,, the length of the end span is kept

OP 1 : 4.5 m
OP 2 : 4m
OP 3 : 3.5 m
OP 4 : 3 m

Question : 14 A reduction factor C_r to load carrying capacity for a long column of effective length L_e and width b is applied as obtained from following expression:

OP 1 : $1\frac{-L_e}{24e}$
OP 2 : $1.25\frac{-L_e}{36b}$
OP 3 : $1.25\frac{-L_e}{48b}$
OP 4 : $1.5\frac{-L_e}{60b}$

Question : 15 A 300 ×× 300 mm RC column is reinforcement with four bars of 12 mm diameter. The diameter of lateral ties is 6 mm. The pitch of lateral ties shall be kept as

OP 1 : 208 mm
OP 2 : 160 mm
OP 3 : 192 mm
OP 4 : 300 mm

Question : 16 A short column 20 cm ×× 20 cm in section is reinforced with 4 bars whose area of cross section is 20 sq.cm.If permissible compressive stresses in concrete and steel are 40 kg/cm^2 and 300 kg/cm ^{2}, the safe load on the column should not exceed-

OP 1 : 412 kg
OP 2 : 4120 kg
OP 3 : 412000 kg
OP 4 : None of these

Question : 17 If the diameter of longitudinal bars of a square column is 16mm thee diameter of lateral ties should not be less than

OP 1 : 4mm
OP 2 : 5mm
OP 3 : 6mm
OP 4 : 8mm

Question : 18 Critical section for calculating bending moment for a spread concrete footing of effective depth d is given by the plane at:

OP 1 : (d/2) from column face
OP 2 : d from column face
OP 3 : column face
OP 4 : 75 mm from column face

Question : 19 If the length of a combined footing for two columns 'l' meters apart is L and the projection on the left side of the exterior column is x, then the projection 'y' on the right side of the exterior column in order to have a uniformly distributed load is (where x is the distance of centre of gravity of columns loads)

1. y=L-(l-x)
2. Y=L/2+(l-x)
3. Y=L/2-(l+x)#y=L/2-(l-x)option

OP 1 : 1 only
OP 2 : 2 only
OP 3 : 3 only
OP 4 : 4 only

Question : 20 In P kg/m^2 is the upward pressure on the slab of a plain concrete footing whose projection on either side of the wall is a cm, the depth of foundation D is given by

1. $D=0.00775a\sqrt{P}$
2. $D=0.0775a\sqrt{P}$
3. $D=0.775a\sqrt{a}$

OP 1 : 1 only
OP 2 : 2 only
OP 3 : 3 only
OP 4 : None of these

Question : 21 If p is the net upward pressure on a square footing of side b for a square column of side a, the maximum bending moment is given by

A. $BM = \frac{pb(b-a)}{4}$
B. $BM = \frac{pb(b-a)^2}{4}$
$BM = \frac{pb(b-a)^2}{8}$
$BM = \frac{pb(b+a)}{8}$

OP 1 : A only
OP 2 : B only
OP 3 : C only
OP 4 : D only

Question : 22 If q is the punching shear resistance per unit area a is the side of a square footing carrying a column of side b, carrying a the depth (D) of the footing from punching shear consideration is

OP 1 : $D = \frac{W(a-b)}{4a^2bq}$
OP 2 : $D = \frac{W(a^2-b^2)}{4a^2bq}$
OP 3 : $D = \frac{W(a^2-b^2)}{8a^2bq}$
OP 4 : $D = \frac{W(a^2-b^2)}{4abq}$

Question : 23 In an RCC staircase, supported at both ends of the going, the going is 4 m and the total rise is 3 m.The total uniformly distributed load is 10 kN/m^2.The maximum moment would be.

OP 1 : 20 kNm
OP 2 : 31.25kNm
OP 3 : 11.25kNm
OP 4 : 25kNm

Question : 24 A cantilever retaining wall should not be used for heights more than:

OP 1 : 4m
OP 2 : 6m
OP 3 : 8m
OP 4 : 10m

Question : 25 The base width of retaining wall of height h is generally taken as, b =

OP 1 : 0.8 h
OP 2 : 0.95 h
OP 3 : 0.6 h
OP 4 : 0.3 h

Question : 1 Answer : 2

Question : 2 Answer : 1

Question : 3 Answer : 3

Question : 4 Answer : 4

Question : 5 Answer : 4

Question : 6 Answer : 3

Question : 7 Answer : 4

Question : 8 Answer : 3

Question : 9 Answer : 1

Question : 10 Answer : 2

Question : 11 Answer : 2

Question : 12 Answer : 3

Question : 13 Answer : 1

Question : 14 Answer : 3

Question : 15 Answer : 3

Question : 16 Answer : 4

Question : 17 Answer : 3

Question : 18 Answer : 3

Question : 19 Answer : 4

Question : 20 Answer : 1

Question : 21 Answer : 3

Question : 22 Answer : 2

Question : 23 Answer : 1

Question : 24 Answer : 3

Question : 25 Answer : 3