Question : 1 According to IS 456-2000 side-face reinforcement should be provided when depth of web of a beam exceeds.

A : 650 mm
B : 700 mm
C : 725 mm
D : 750 mm

Question : 2 Bending moment co-efficient and shear co-effective for continuous beams of uniform cross-section as per IS:456 (table 12 and 13) may be used only when spans do not differ to the longest span by:

A : 0.15
B : 0.2
C : 0.1
D : 0.12

Question : 3 As per IS:456, the effective length of cantilever beam shall be taken as:

A : Clear span
B : Clear span + effective depth/2
C : Clear span + effective depth
D : Clear span + effective width

Question : 4 Spacing of stirrups in a rectangular beam is :

A : Increased at the ends
B : Kept constant throughout the length
C : Decreased towards the centre of beam
D : Increased at the centre of beam

Question : 5 The thickness of the flange of T-beam of a ribbed slab is assumed is

A : half the thickness of the rib
B : Thickness of the concrete topping
C : depth of the rib
D : Width of the rib

Question : 6 A reinforced cantilever beam of span 4 m has a cross-section of 150 x 500 mm. If checked for lateral stability and deflection, the beam will____.

A : Fail in deflection only.
B : Fail in lateral stability only.
C : Fail in both deflection and lateral stability
D : Satisfy the requirements of deflection and lateral stability

Question : 7 The final deflection due to all loads including the effects of temperature, creep and shrinkage and measured from as-cast level of supported of floors, roofs and all other horizontal members should not exceed_____.

A : Span/350
B : Span/300
C : Span/250
D : Span/200

Question : 8 Torsion resisting capacity of a given reinforced concrete section____.

A : Decreases with decrease in stirrup spacing
B : Decreases with increase in longitudinal bars.
C : Does not depends upon stirrup and longitudinal steels
D : Increases with the increase in stirrups and longitudinal steels.

Question : 9 Minimum spacing between horizontal parallel reinforcement of different sizes, should not be less than :

A : One diameter of thinner bar.
B : One diameter of thicker bar.
C : Sum of the diameters of thinner and thicker bars.
D : Twice the diameter of thinner bar.

Question : 10 The minimum thickness of the cover at the end of a reinforcing bar should not be less than twice the diameter of the bar subject to a minimum:

A : 10 mm
B : 15 mm
C : 20 mm
D : 25 mm

Question : 11 The width of the flange of a T-beam, which may be considered to act effectively with the rib depends upon____.

A : Breadth of the rib
B : Overall thickness of the rib
C : Center to center distance between T-beams
D : All options are correct

Question : 12 If permissible compressive stress in concrete is 50kg/cm^2, tensile stress in steel is 1400 kg/cm^2 and modular ratio is 18, the depth of beam is____.

1. $d = \sqrt{\frac{0.11765 \times BM}{breadth}}$
2. $d = \sqrt{\frac{0.22765 \times BM}{breadth}}$
3. $d = \sqrt{\frac{0.33765 \times BM}{breadth}}$
4. $d = \sqrt{\frac{0.44765 \times BM}{breadth}}$

A : I only
B : II only
C : III only
D : IV only

Question : 13 A beam curved in plan is designed for

A : Bending moment and shear
B : Bending moment and torsion
C : Shear and torsion
D : bending moment, shear and torsion

Question : 14 By over reinforced beam, the moment of resistance can be increased not more than

A : 0.1
B : 0.15
C : 0.2
D : 0.25

Question : 15 A singly reinforced concrete beam of 25 cm width and 70 cm effective depth is provided with 18.75 cm^2 steel.If the modular ratio (m) is 15, the depth of neutral axis is

A : 20 cm
B : 25 cm
C : 30 cm
D : 35 cm

Question : 16 If the neutral axis of a T-beam is below the slab the relationship between the flange width B, depth of neutral axis n, thickness of the slab d_s,effective depth of the beam d, gross area of tensile steel A_t, and the modular ratio m may be stated as

A : $Bd_s(n-d_s/2)=mA_t(d+n)$
B : $Bd_s(n+d_s/2)=mA_t(d-n)$
C : $Bd_s(n-d_s/2)=mA_t(d-n)$
D : None of these

Question : 17 If the permissible compressive and tensile stresses in a singly reinforced beam are 50 kg/cm^2 and 1400 kg/cm^2 respectively and the modular ratio is 18, the percentage of the steel required for an economic section is :

A : 0.00496
B : 0.00596
C : 0.00696
D : None of these

Question : 18 An intermediate T-beam reinforced with two layers of tensile steel with clear cover 13 cm encasted with the floor for a hall 12 meters by 7 meters, is spaced at 3 meters from adjoining beams and if the width of the beam is 20 cm, the breadth of the flange is :

A : 300 cm
B : 233 cm
C : 176 cm
D : 236 cm

Question : 19 For initial estimate for a beam design, the width is assumed

A : 1/15th of the span
B : 1/20th of the span
C : 1/25th of the span
D : 1/30th of the span

Question : 20 The moment of couple set up in a section of a beam by the longitudinal compressive and tensile force is known as:

A : Bending moment
B : Moment of resistance
C : Flexure stress moment
D : None of these

Question : 21 If the depth of actual neutral axis of a doubly reinforced beam.

A : Is greater than the depth of critical neutral axis, the concrete attains its maximum stress earlier.
B : Is less than the depth of critical neutral axis, the steel in the tensile zone attains its maximum stress earlier
C : Is equal to the depth of critical neutral axis, the concrete and steel attain their maximum stresses simultaneously
D : All option are correct

Question : 22 Minimum spacing between horizontal parallel reinforcement of the same size should not be less than

A : One diameter
B : 2.5 diameter
C : 3 diameter
D : 3.5 diameter

Question : 23 In a singly reinforced beam, the effective depth is measured from its compression edge to

A : Tensile edge
B : Tensile reinforcement
C : Neutral axis of the beam
D : Longitudinal central axis

Question : 24 In a doubly reinforced beam if c and t are stresses in concrete and tension reinforcement d is the effective depth and n is depth of critical neutral axis,the following relationship holds good

A : mc/t=n/(d-n)
B : (m+c)/t=n(d+n)
C : (t+c)/m=(d+n)/n
D : mc/t=(d-n)/t

Question : 25 The thickness of the flange of a Tee beam of a ribbed slab is assumed as

A : Width of the rib
B : Depth of the rib
C : Thickness of concrete topping
D : Half the thickness of rib

Question : 26 According to the steel beam theory of doubly reinforced beams.

A : Tension is resisted by tension steel.
B : Compression is resisted by compression steel.
C : Stress in tensile steel equals the stress in compression steel.
D : All option are correct

Question : 27 The stress developed in concrete and steel in reinforced concrete beam 25cm width an 70cm effective depth are 62.5 kg/cm^2 and 250 kg/cm^2 respectively.If m =15, the depth of its neutral axis is

A : 20 cm
B : 25 cm
C : 30 cm
D : 35 cm

Question : 28 The effective span of simply supported slab is

A : Distance between the centre of the bearing
B : Clear distance between the inner face of the wall plus twice the thickness of the wall
C : Clear span plus effective depth of the slab
D : None of these

Question : 29 For a continuous floor slab supported on beam, the ratio of the end span of length and intermediate span length is :

A : 0.6
B : 0.7
C : 0.8
D : 0.9

Question : 30 If the maximum bending moment of a simply supported slab is M kg-cm, the effective depth of the slab is

A : $\frac{M}{100Q}$
B : $\frac{M}{10\sqrt{Q}}$
C : $\sqrt{\frac{M}{Q}}$
D : $\sqrt{\frac{M}{100Q}}$

Question : 01 - Answer : 4

Question : 02 - Answer : 1

Question : 03 - Answer : 2

Question : 04 - Answer : 4

Question : 05 - Answer : 2

Question : 06 - Answer : 3

Question : 07 - Answer : 3

Question : 08 - Answer : 4

Question : 09 - Answer : 2

Question : 10 - Answer : 4

Question : 11- Answer : 4

Question : 12 - Answer : 1

Question : 13 - Answer : 4

Question : 14 - Answer : 4

Question : 15 - Answer : 3

Question : 16 - Answer : 3

Question : 17 - Answer : 3

Question : 18 - Answer : 3

Question : 19 - Answer : 2

Question : 20 - Answer : 2

Question : 21 - Answer : 4

Question : 22 - Answer : 1

Question : 23 - Answer : 2

Question : 24 - Answer : 1

Question : 25 - Answer : 3

Question : 26 - Answer : 4

Question : 27 - Answer : *

Question : 28 - Answer : 3

Question : 29 - Answer : 4

Question : 30 - Answer : 4