Unit 6 - Week 4

Course outline

How to access the portal

Week 0 : Assignment 0

Week 1

Week 2

Week 3

Week 4

- Lecture 11 : Limit State of Collapse Shear
- Lecture 12 : Design for Shear
- Lecture 13 : Design for Shear (Contd.)
- Quiz : Assignment 4
- Feedback for week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

DOWNLOAD VIDEOS

Assignment Solution

Assignment 4

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-08-28, 23:59 IST.

1) According IS 456, the maximum permissible shear stress for M20 grade of concrete is equal to: 1 point

(a) 2.4 N/mm^2
(b) 2.8 N/mm^2
(c) 3.6 N/mm^2
(d) 4.0 N/mm^2

a
b
c
d

No, the answer is incorrect.
Score: 0
Accepted Answers:
b

2) The shear failure can be due to 1 point

(a) Shear-tension
(b) Shear-compression
(c) Shear-bond
(d) All of these

a
b
c
d

No, the answer is incorrect.
Score: 0
Accepted Answers:
d

3) For a shear force, V_{us} for which vertical shear reinforcement is to be provided, the ratio of V_{us} and effective depth (d) of beam is dependent on 1 point

(a) Shear reinforcement
(b) Spacing of shear reinforcement
(c) Grade of steel
(d) All of these

a
b
c
d

No, the answer is incorrect.
Score: 0
Accepted Answers:
d

4) For 2-legged stirrups of diameter 8mm the area of shear reinforcement is equal to 1 point

(a) 140.74mm^2
(b) 120.64mm^2
(c) 100.53mm^2
(d) 80.42mm^2

a
b
c
d

No, the answer is incorrect.
Score: 0
Accepted Answers:
c

5) A rectangular beam of width b, overall depth D and effective depth d, is applied with shear force V, with the corresponding factored shear force shear force as V_{us}, the nominal shear stress τ_v of beam is obtained by the equation: 1 point

(a) V_u/(bD)
(b) V/(bD)
(c) V_u/(bd)
(d) V/(bd)

a
b
c
d

No, the answer is incorrect.
Score: 0
Accepted Answers:
c

6) For a rectangular beam of width, b, overall depth, D and effective depth, d the maximum spacing of vertical shear reinforcement shall be provided as 1 point

(a) 0.75D
(b) 0.75d
(c) 0.75D or 300mm whichever is less
(d) 0.75d or 300mm whichever is less

a
b
c
d

No, the answer is incorrect.
Score: 0
Accepted Answers:
d

7) The rectangular beam of width, 300 mm is having overall depth of 600 mm. The concrete grade is M20 and the grade of reinforcing steel is Fe415. The tensile reinforcement is provided by 5-20 mm dia bars. The clear cover is 25 mm. The design shear strength of concrete, τ_c, N/mm^2 for M20 grade of concrete is given as (100 A_{st}/bd ,τ_c, N/mm^2) (0.25,0.36), (0.50, 0.48), (0.75, 0.56), (1.00, 0.62), (1.25, 0.67), (1.50, 0.72), (1.75, 0.75), (2.00, 0.79), (2.25, 0.81), (2.50, 0.82) As per limit state, the critical shear capacity of beam is equal to : 1 point

(a) 76.582 kN
(b) 102.109 kN
(c) 127.636 kN
(d) 153.164 kN

a
b
c
d

No, the answer is incorrect.
Score: 0
Accepted Answers:
b

8) The rectangular beam of width, 300 mm is having overall depth of 600 mm. The concrete grade is M20 and the grade of reinforcing steel is Fe415. The tensile reinforcement is provided by 5-20 mm dia bars. The clear cover is 25 mm. The design shear force is 350.0 kN The design shear strength of concrete, τ_c, N/mm^2 for M20 grade of concrete is given as (100A_{st}/ bd ,τ_c, N/mm^2) (0.25,0.36), (0.50, 0.48), (0.75, 0.56), (1.00, 0.62), (1.25, 0.67), (1.50, 0.72), (1.75, 0.75), (2.00, 0.79), (2.25,0.81), (2.50, 0.82). For M20 grade of concrete, the maximum shear stress permitted is 2.80 N/mm^2. The spacing of stirrups for 2-legged stirrup of diameter 8 mm is closer to : 1 point

(a) 40 mm
(b) 60 mm
(c) 80 mm
(d) 100 mm

a
b
c
d

No, the answer is incorrect.
Score: 0
Accepted Answers:
c

9) A rectangular beam of width, 300 mm is having overall depth of 600 mm. The concrete grade is M20 and the grade of reinforcing steel is Fe415. The tensile reinforcement is provided by 5-20 mm dia bars. The clear cover is 25 mm. The design shear force is 500.0 kN. The design shear strength of concrete, τ_c, N/mm^2 for M20 grade of concrete is given as (100A_{st}/bd ,τ_c, N/mm^2) (0.25,0.36), (0.50, 0.48), (0.75, 0.56), (1.00, 0.62), (1.25, 0.67), (1.50, 0.72), (1.75, 0.75), (2.00, 0.79), (2.25, 0.81), (2.50, 0.82). For M20 grade of concrete, the maximum shear stress permitted is 2.80 N/mm^2. The spacing of stirrups for 2-legged stirrup of diameter 8 mm is closer to : 1 point

(a) 100 mm
(b) 200 mm
(c) 300 mm
(d) Increase depth of beam

a
b
c
d

No, the answer is incorrect.
Score: 0
Accepted Answers:
d

10) The rectangular beam of width, 300 mm is having overall depth of 600 mm. The concrete grade is M20 and the grade of reinforcing steel is Fe415. The tensile reinforcement is provided by 5-20 mm dia bars. The clear cover is 25 mm. The design shear force is 500 kN. The design shear strength of concrete, τ_c, N/mm^2 for M20 grade of concrete is given as (100A_{st}/bd ,τ_c, N/mm^2) (0.25,0.36), (0.50, 0.48), (0.75, 0.56), (1.00, 0.62), (1.25, 0.67), (1.50, 0.72), (1.75, 0.75), (2.00, 0.79), (2.25, 0.81), (2.50, 0.82). For M20 grade of concrete, the maximum shear stress permitted is 2.80 N/mm^2. The shear stress, τ_v is equal to 1 point

(a) 5.16 N/mm^2
(b) 4.42 N/mm^2
(c) 3.69 N/mm^2
(d) 2.95 N/mm^2

a
b
c
d

No, the answer is incorrect.
Score: 0
Accepted Answers:
d