Unit 7 - Week 5

Assignment 5

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

Due on 2019-09-04, 23:59 IST.

1) The slenderness ratio of a member which is subjected to compressive forces resulting only from combination of earthquake/wind forces, is: — 1 point

a. 275
b. 250
c. 300
d. 400

a.
b.
c.
d.

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

2) The design tensile strength of a single angle due to rupture of critical section is given by: — 1 point

a. $T_{dn} = \frac{0.9 A_{nc} f_u}{\gamma_{m1}} + \frac{\beta A_{go} f_y}{\gamma_{m0}}$
b. $T_{dn} = \frac{0.8 A_{nc} f_u}{\gamma_{m1}} + \frac{\beta A_{go} f_y}{\gamma_{m0}}$
c. $T_{dn} = \frac{\beta A_{nc} f_u}{\gamma_{m1}} + \frac{0.9 A_{go} f_y}{\gamma_{m0}}$
d. None of the above

a.
b.
c.
d.

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

3) For a single angle unequal angle tie member, the leg preferred for making connection is the: — 1 point

a. Longer one
b. Shorter one
c. Any of the two
d. Longer if bolted, shorter if welded.

a.
b.
c.
d.

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

4) What is the shear lag width for ISA 100×75×10 in case of bolt connection? (Outstanding leg is shorter side, assume gauge distance = 45 mm) — 2 points

a. 100 mm
b. 130 mm
c. 105 mm
d. 110 mm

a.
b.
c.
d.

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

5) What is the shear lag width of ISA 75×75×8 in case of weld connection? — 1 point

a. 75 mm
b. 80 mm
c. 67 mm
d. 83 mm

a.
b.
c.
d.

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

6) For preliminary sizing the rupture strength of a net section can be approximately taken as, $T_{dn} = \frac{\alpha A_n f_u}{\gamma_{m1}}$. The value of α for three bolts is: — 1 point

a. 0.5
b. 0.8
c. 0.7
d. 0.6

a.
b.
c.
d.

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

7) A single angle section 75X60X8 is connected with gusset plate with 5 bolts of 20 mm diameter in one line at pitch of 50 mm and edge distance of 30 mm. What is the design tensile strength of the section for rupture of net section? (Assume the section is connected with longer leg and gauge distance = 35 mm) — 4 points

a. 398 kN
b. 243kN
c. 351 kN
d. 180 kN

a.
b.
c.
d.

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

8) A single ISA 100 × 75 × 10 is connected (longer leg) with gusset plate using 5 bolts of 20 mm diameter in one line at pitch of 50 mm and edge distance of 30 mm. What is the Design tensile strength due to block shear failure? (Assume gauge distance = 50 mm) — 4 points

a. 337kN
b. 417kN
c. 351kN
d. 450 kN

a.
b.
c.
d.

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

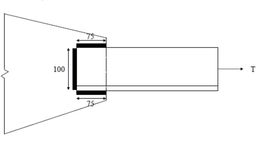
9) For block shear failure of a tension member, the failure occurs along a path through the connection involving: — 1 point

a. Tension on one plane and shear on the other perpendicular plane.
b. Tension on the two perpendicular planes.
c. Shear on the two perpendicular planes.
d. Tension on the plane of connection and compression on the other perpendicular plane

a.
b.
c.
d.

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

10) An ISA 100×75×10 of Fe 410 grade is connected to 12 mm gusset plate by longer leg by weld as shown in figure. Calculate the design tensile strength due to rupture of critical section. (All dimensions are in mm) — 4 points



a. 221kN
b. 891kN
c. 448kN
d. 580kN

a.
b.
c.
d.

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