

Unit 13 - Week 11

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Assignment 11

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

Due on 2019-10-16, 23:59 IST.

1) What is the bending stress reduction factor (X_{LT}) to account for lateral torsion buckling for a welded steel section if the slenderness ratio, $\lambda_{LT} = 1.1$? 2 points

- a. 0.42
b. 0.55
c. 0.48
d. 0.53

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

2) Determine the plastic section modulus of ISLB 400 @ 56.9 kg/m about the strong axis and weak axis. (Neglect the fillets). 4 points

- a. 1080 cm^3 , 176 cm^3
b. 1699 cm^3 , 258 cm^3
c. 1778 cm^3 , 350 cm^3
d. 176 cm^3 , 1080 cm^3

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

3) A beam of length 6 m is carrying a load 12 kN/m. ISLB 350 @ 49.5 kg/m³ is selected after design procedure. What is the maximum deflection in the beam considering bending in strong axis? (neglect self-weight) 2 points

- a. 8.5 mm
b. 9.2 mm
c. 7.7 mm
d. 4.5 mm

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

4) The required plastic section modulus of an angle section purlin is generally calculated by, 1 point

- a. $Z_{p,reqd} = \frac{M}{1.33 \times 0.66 \times f_y}$
b. $Z_{p,reqd} = \frac{M}{1.5 \times f_y}$
c. $Z_{p,reqd} = \frac{M}{f_y}$
d. None of the above

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

5) A proposed simply supported beam is built into a concrete wall. It supports a dead load of 18 kN/m and a live load 12 kN/m. The length of the beam is 5 m. But the beam depth is restricted to 300 mm, so ISMB 250 @ 37.3 kg/m has been chosen as beam section. Calculate the minimum width of the plate that has to be connected to both flanges if the thickness of the plates is 8 mm. (Neglect deflection check and self-weight) 4 points

- a. 60 mm
b. 80 mm
c. 100 mm
d. 120 mm

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

6) What is the additional vertical impact load for hand operated cranes? 1 point

- a. 20% of the maximum static wheel load
b. 1% of the maximum static wheel load
c. 5% of the maximum static wheel load
d. 10% of the maximum static wheel load

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

7) What is the IS 875 recommendation for lateral loads for electric operated cranes? 1 point

- a. 50% of the total weight including lifted weight and trolley weight.
b. 12% of the total weight including lifted weight and trolley weight.
c. 10% of the total weight including lifted weight and trolley weight.
d. 20% of the total weight including lifted weight and trolley weight.

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

8) An industrial building is to support a galvanized iron sheet roof for the following data: 4 points

Slope of truss = 30°
Spacing of truss c/c = 6.0 m
spacing of purlins c/c = 2.5 m
wind speed = 40 m/s
Weight of galvanized sheets = 110 N/m²
Dead load of purlin = 120 N/m
Calculate the magnitude of the factored bending moment due to normal load.

- a. 8kN-m
b. 11kN-m
c. 15kN-m
d. 17kN-m

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

9) What is the permissible deflection of the gantry girder (span = L) for electric operated cranes with a weight more than 50t ? 1 point

- a. L/500
b. L/1000
c. L/750
d. L/250

- a.
 b.
 c.
 d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.