Assignment 4

The due date for submitting this assignment has passed. Due on 2019-09-25, 23:59 IST. As per our records you have not submitted this assignment.

1) As per Pigeaud’s curve, the moment coefficient, m₁ along the shorter direction is found as 0.150, whereas, the moment coefficient, m₂ along the longer direction is found as 0.070. Considering Poisson’s ratio (μ) of concrete as 0.20 and the total load, P as 25,000 kN, the bending moment along shorter direction is equal to:

(a) 3.075 kNm
(b) 4.100 kNm
(c) 5.125 kNm
(d) 6.150 kNm

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

2)
As per Pigou's curve, the moment coefficient, \( m_1 \), along the shorter direction is found as 0.150, whereas, the moment coefficient, \( m_3 \), along the longer direction is found as 0.070. Considering Poisson's ratio (\( \mu \)) of concrete as 0.20 and the total load, \( P \) as 25.000 kN, the bending moment along longer direction is equal to:

(a) 1.250 kNm
(b) 1.875 kNm
(c) 2.500 kNm
(d) 3.125 kNm

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

3) In a two lane bridge, the foot path having width of 1500mm is provided in one side of the bridge. The crash barriers having base width, 450mm is provided on both sides of the bridge. Considering three longitudinal girders in an RCC T beam bridge and length of overhang in both sides as half the centre to centre distance of girders, the centre to centre spacing of longitudinal girders will be equal to:

(a) 1650mm
(b) 2475mm
(c) 3300mm
(d) 4125mm

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

4)
In a two lane bridge, the foot path of width, 1500mm is provided in one side of the bridge. The crash barriers having base width, 450mm is provided on both sides of the bridge. Considering three longitudinal girders in an RCC T beam bridge and length of overhang in both sides as half the centre to centre distance of girders, the length of overhang from the centre line of outer longitudinal girders will be equal to

(a) 1238mm
(b) 1650mm
(c) 2062mm
(d) 2475mm

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

5) 1 point
In a two lane bridge, the foot path of width, 1500mm is provided in one side of the bridge. The crash barriers having base width, 450mm is provided on both sides of the bridge. Considering four longitudinal girders in an RCC T beam bridge and length of overhang in both sides as half the centre to centre distance of girders, the centre to centre spacing of longitudinal girders will be equal to

(a) 1238mm
(b) 1856mm
(c) 2475mm
(d) 3094mm

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

6) 1 point
In an RCC T beam bridge, the end girder is considered as T beam. The width of the flange is taken as 2400 mm and the depth of flange is taken as 250 mm. The thickness of web is 325 mm. The overall depth of the T beam is 1700 mm. The clear cover is 30 mm and longitudinal reinforcements are provided by 18 nos. of 32 mm dia. The longitudinal reinforcement provided in percentage is equal to

(a) 2.02
(b) 2.69
(c) 3.37
(d) 4.04

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

7) The overall depth of deck slab of a RCC T beam bridge is 250 mm and the overall depth the T beam (including slab) is 1700 mm. The thickness of web at mid span is 325 mm and the flange width of the RCC T beam is taken as 2400 mm. The clear cover is 30 mm. The longitudinal reinforcements are provided by 32 mm dia bars. The concrete grade is M30 and the steel grade is Fe415. Considering rectangular stress block of concrete, as per Limit State Method followed in IRC, the ultimate moment capacity of concrete is:

(a) 7213.338 kNm
(b) 10820.007 kNm
(c) 14426.676 kNm
(d) 18033.345 kNm

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

8)
The overall depth of deck slab of a RCC T beam bridge is 250 mm and the overall depth of the T beam (including slab) is 1700 mm. The thickness of web at mid span is 325 mm and the flange width of the RCC T beam is taken as 2400 mm. The clear cover is 30 mm. The longitudinal reinforcements are provided by 32 mm dia bars. The concrete grade is M30 and the steel grade is Fe415. Considering rectangular stress block of concrete, as per Limit State Method followed in IRC, the tensile reinforcement in the balanced section is computed as:

(a) $27098.68 \text{ mm}^2$
(b) $29810.5 \text{ mm}^2$
(c) $32520.5 \text{ mm}^2$
(d) $35230.5 \text{ mm}^2$

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

9) The design moment in a RCC T Beam is 12000.000 kNm. The overall depth of deck slab of a RCC T beam bridge is 250 mm and the overall depth of the T beam (including slab) is 1700 mm. The thickness of web at mid span is 325 mm and the flange width of the RCC T beam is taken as 2400 mm. The clear cover is 30 mm. The longitudinal reinforcements are provided by 32 mm dia bars. The concrete grade is M30 and the steel grade is Fe415. Considering rectangular stress block of concrete, as per Limit State Method followed in IRC, the required tensile reinforcement for the design moment is:

(a) $21691.2 \text{ mm}^2$
(b) $23860.6 \text{ mm}^2$
(c) $26029.7 \text{ mm}^2$
(d) $28198.9 \text{ mm}^2$

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

10)
In an RCC T Beam bridge, the width of carriageway is 7500mm. The base width of crash barrier is 450mm and the width of footpath is 1500mm. Two class-A vehicles for wheel load, 114kN in transverse direction are shown in the following figure. From the end of left footpath, the distance ($f_{cc}$) of centre of left wheel is equal to 400mm. The centre to centre spacing ($g_{cc}$) between two vehicles is equal to 1700mm. As per Courbon’s method, the load distributed in girder $G_1$ for the present vehicle condition is equal to

(a) 36.9kN
(b) 55.3kN
(c) 73.8kN
(d) 92.2kN

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