Program: BE CIVIL Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester VI

Course Code: CEC602 and Course Name: Design and Drawing of Steel Structures

Time: 1 hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	Poisson's ratio of steel in elastic state is-
Option A:	0.2
Option B:	0.35
Option C:	0.3
Option D:	0.4
Q2.	Limiting slenderness ratio of a member carrying compressive loads resulting from dead loads and imposed loads is
Option A:	180
Option B:	200
Option C:	350
Option D:	400
Q3.	The value of imperfection factor for an angle compression member is taken as-
Option A:	0.34
Option B:	0.45
Option C:	0.49
Option D:	0.76
Q4.	Usually the design strength of a tension member is governed-
Option A:	Yielding
Option B:	Rupture
Option C:	Shear leg effect
Option D:	Block shear
Q5.	Under exactly identical conditions ,battened column as compared to laced column is

Option A:	Equal in strength
Option B:	Weaker in strength
Option C:	Stronger in strength
Option D:	Data insufficient
Q6.	Maximum spacing of lacing bars shall be such that the maximum slenderness of the main member between consecutive lacing connection is not more than
Option A:	30
Option B:	40
Option C:	50
Option D:	60
Q7.	The outstand of gusset plate from the column flange edge is limited to _____ because buckling consideration
Option A:	$9.4\ \varepsilon t_g$
Option B:	$16.6\ \varepsilon t_g$
Option C:	$8.4\ \varepsilon t_g$
Option D:	$13.6\ \varepsilon t_g$
Q8.	Compression members always tend to buckle-
Option A:	About major principle axis
Option B:	About minor principle axis
Option C:	About any lateral axis
Option D:	About the polar axis
Q9.	Lateral buckling in beam is
Option A:	Non-dimensional
Option B:	one dimensional
Option C:	two dimensional
Option D:	three dimensional
Q10.	The value of 'β_b' in the equation of design bending strength for plastic section is
Option A:	1.5
Option B:	2
Option C:	0.5
Option D:	1

Q11.	Web crippling in a beam is initiated at -
Option A:	mid depth of web
Option B:	the junction of web and flange
Option C:	the root of fillet in web
Option D:	the midpoint of flange
Q12.	As per IS Code the moment capacity of the trial section of a plate girder is calculated by-
Option A:	β_b Zp f_y / γ_{m1}
Option B:	β_b Zp f_u / γ_{mb}
Option C:	β_b Zp f_y / γ_{m0}
Option D:	β_b Zp f_u / γ_{m1}
Q13.	In case of plate girder, to improve the buckling strength of a slender web due to shear, which stiffener is provided?
Option A:	Bearing stiffeners
Option B:	Diagonal stiffeners
Option C:	Intermediate transverse web stiffeners
Option D:	Load carrying stiffeners
Q14.	If the end bearing Stiffeners of a welded plate Girder having Slenderness ratio λ= 20, fy=250 N/mm^2, & buckling curve = 'c', Calculate the buckling resistance (P_d) of the end bearing stiffeners, if effective area of the stiffener is 15500 mm^2,
Option A:	3672 kN
Option B:	3202 kN
Option C:	3172 kN
Option D:	3472 kN
Q15.	Web of the Plate Girder is designed to resist
Option A:	Tension in Web
Option B:	Torsion
Option C:	Shear
Option D:	Bending moment
Q16.	The section ISMB 350 @ 52.4 Kg/m to be used in flooring system is
Option A:	Plastic section

Option B:	Compact section
Option C:	Semi-compact section
Option D:	Slender section
Q17.	Which of the following is the reason for beams, plate girders and columns being spliced-
Option A:	due to limitations of fabrication shop
Option B:	For easy transportation
Option C:	For aesthetic appearance
Option D:	For frictional resistance
Q18.	Seat angle used in an unstiffened seat connection is designed for-
Option A:	Only bearing
Option B:	Only shear
Option C:	Only bending moment
Option D:	Bearing, shear and bending moment
Q19.	The slope of a roof truss is 30^0 (access is not provided except maintenance), the imposed load on the roof truss taken as
Option A:	350 N/m^2
Option B:	400 N/m^2
Option C:	750 N/m^2
Option D:	1500 N/m^2
Q20.	The self-weight of a roof truss (N/m^2) may be obtained
Option A:	(span/3+5)×10
Option B:	(span/5+3)×10
Option C:	(span/3-5)×10
Option D:	(span/5-3)×10
Q21.	The purlins in the roof trusses are subjected to unsymmetrical bending because the loading
Option A:	is parallel to the minor principal axis, but does not coincide.
Option B:	is perpendicular to the minor principal axis.
Option C:	is inclined to the minor principal axis.

Option D:	coincide with the minor principal axis.
Q22.	While designing a steel roof truss, the IS Code 875 Part-IV is referred for-
Option A:	Live load
Option B:	Earthquake load
Option C:	Load Combination
Option D:	Snow load
Q23.	Which of the following is a disadvantage of Steel?
Option A:	High strength per unit mass
Option B:	High durability
Option C:	Fire and corrosion resistance
Option D:	Reusable
Q24.	In a bolted bracket connection Type-II, the most critical bolt is subjected to-
Option A:	Only shear
Option B:	Only tension
Option C:	Only bearing
Option D:	Combined shear and tension
Q25.	In a given flooring system, if the secondary beam carries total distributed load as 200 KN (factored) then the beam end connection will be designed for a shear of-
Option A:	100 KN
Option B:	150 KN
Option C:	175 KN
Option D:	200 KN

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	C
Q2.	A
Q3.	C
Q4.	A
Q5.	B
Q6.	C
Q7.	D
Q8.	B
Q9.	D
Q10.	D
Q11.	C
Q12.	C
Q13.	C
Q14.	D
Q15.	C
Q16.	A
Q17.	B
Q18.	D
Q19.	B
Q20.	A
Q21.	C
Q22.	D
Q23.	C
Q24.	D
Q25.	A