Program: BE Civil Engineering

Curriculum Scheme: Revised 2016

Examination: Final Year Semester VII

Course Code: **CE-C 702** Course Name: **Theory of Reinforced Concrete 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.	Which of the following relation is correct in working stress method?
Option A:	Permissible Stress = Yield Stress x Factor of Safety
Option B:	Permissible Stress = Yield Stress / Factor of Safety
Option C:	Yield Stress = Permissible Stress / Factor of Safety
Option D:	Permissible Stress = Yield Stress – Factor of Safety
Q2.	Design constants (k & j) in WSM are depends on
Option A:	Size of member
Option B:	Grade of steel and concrete
Option C:	Length of member
Option D:	Loading
Q3.	WSM is based on assumption that____
Option A:	Both steel and concrete loaded till failure
Option B:	The stress-strain relationship of steel and concrete under working load is linear
Option C:	Steel and concrete have same value of elastic constant
Option D:	Concrete is subjected to tension
Q4.	In WSM factor of safety is applied to ___
Option A:	Materials
Option B:	Loads
Option C:	Both materials and loads
Option D:	Neither material nor loads
Q5.	Which of the following is the correct expression for calculation moment of resistance for balanced section in WSM?
Option A:	M = 0.36 Qbd
Option B:	M= 0.446 Qbd
Option C:	$M = Qbd^2$
Option D:	$M= fck\ bd^2$
Q6.	What is the value of moment of resistance constant (Q) for M20 concrete and Fe 415 steel in WSM?
Option A:	0.61
Option B:	0.71
Option C:	0.81
Option D:	0.91

Q7.	As per IS:456-2000 concrete having characteristic strength varying between M25 to M55 is known as
Option A:	Ordinary concrete
Option B:	Standard concrete
Option C:	High strength concrete
Option D:	design strength concrete
Q8.	As the percentage of steel increases
Option A:	Depth of neutral axis decreases
Option B:	Depth of neutral axis increases
Option C:	lever arm increases
Option D:	lever arm decreases
Q9.	In a simple supported beam having length = "l" and subjected to a concentrated load (W) at mid-point
Option A:	Maximum Bending moment = Wl/4 at the mid-point
Option B:	Maximum Bending moment = Wl/4 at the end
Option C:	Maximum Bending moment = Wl/8 at the mid-point
Option D:	Maximum Bending moment = Wl/8 at the end
Q10.	Point of contra-flexure is also called
Option A:	Point of maximum Shear force
Option B:	Point of maximum Bending moment
Option C:	Point of inflexion
Option D:	Fixed end
Q11.	The maximum area of tension reinforcement in beams shall not exceed
Option A:	0.15%
Option B:	1.5%
Option C:	4%
Option D:	1%
Q12.	In a singly reinforced beam, the effective depth is measured from its compression edge to
Option A:	Centre of tensile reinforcement
Option B:	Neutral axis of the beam
Option C:	Longitudinal central axis
Option D:	Bottom of beam
Q13.	The maximum strain in concrete at the outermost fibre is
Option A:	0.0025
Option B:	0.003
Option C:	0.002
Option D:	0.0035
Q14.	Which of the following is not a design case in T-Beam design by LSM? Where Xa is Depth of Actual neutral axis and Df is Depth of Flange of T-Beam.

Option A:	Xa< Df
Option B:	Xa> Df and Df < 0.42Xa
Option C:	Xa< Df and Df < 0.42Xa
Option D:	Xa> Df and Df > 0.42Xa
Q15.	Limiting depth of Neutral axis of beam reinforced with Fe500 grade steel with respect to effective depth of beam as per LSM is given by
Option A:	0.46d
Option B:	0.53d
Option C:	0.48d
Option D:	0.43d
Q16.	A rectangular slab 4m X 6m supported on four edge should be designed as
Option A:	One-way slab spanning along longer edge
Option B:	Two-way slab
Option C:	One-way slab spanning along shorter edge
Option D:	Square slab
Q17.	The nominal cover required for a slab having mild exposure, with diameter of reinforcing bars 10mm should be not less than
Option A:	30 mm
Option B:	20 mm
Option C:	25 mm
Option D:	16 mm
Q18.	Basic value of span/depth ratio for limit of deflection for cantilever slab is
Option A:	12
Option B:	26
Option C:	7
Option D:	20
Q19.	The lateral ties in a reinforced concrete rectangular column under axial compression are primarily used to
Option A:	Avoid the buckling of the longitudinal steel under compression
Option B:	Provide adequate shear capacity
Option C:	Resist vertical load
Option D:	Reduce the axial deformation of the column
Q20.	The diameter of main bar in column should not be less than
Option A:	16 mm
Option B:	8 mm
Option C:	12 mm
Option D:	20 mm
Q21.	The Maximum cross-sectional area of main bar in column should not be greater than
Option A:	4%
Option B:	6%

Option C:	8%
Option D:	10%
Q22.	Critical section for one-way shear is acting at distance ... from column face
Option A:	Effective depth
Option B:	Half the effective depth
Option C:	Twice the effective depth
Option D:	Thrice the effective depth
Q23.	Area of footing depends upon load and
Option A:	SBC of soil
Option B:	Grade of steel
Option C:	Grade of concrete
Option D:	Height of column
Q24.	Area of footing is calculated as
Option A:	Total load / SBC
Option B:	Total load x SBC
Option C:	Total load - SBC
Option D:	Total + SBC
Q25.	In two-way slab lifting of corner occur due to
Option A:	Resultant shear force
Option B:	Unbalanced moment
Option C:	Torsional moment
Option D:	Resultant stress