Program: BE Civil Engineering

Curriculum Scheme: Revised 2012

Examination: Final Year Semester VII

Course Code: CE-E705 and Course Name: Prestressed Concrete

Time: 1 hour Max. Marks: 50

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

Q1.	Pre-stressed concrete is most suitable for
Option A:	Long span structures
Option B:	Short span structure
Option C:	Structures carrying impact load
Option D:	Structures subjected to earthquake loads
Q2.	Which of the following method of prestressing is suitable for pre-tensioned members
Option A:	Freyssinet system
Option B:	Magnel Blaton System
Option C:	Hoyer system
Option D:	Glifford-Udall System
Q3.	The locus of point of application of resultant in prestressing structure is called as
Option A:	Cable line
Option B:	Pressure line
Option C:	Force line
Option D:	Tension line
Q4.	The zone of cross section if subjected compressive load does not produce any tensile stresses is called as
Option A:	Kern point
Option B:	Center of gravity
Option C:	Center of mass
Option D:	Point of load application
Q5.	A rectangular concrete beam 250 mm wide by 300 mm deep is prestressed by a force of 240 kN at a constant eccentricity. If the stress due to bending moment is 8.6 N/mm^2 what will be the eccentricity of the cable ?
Option A:	75.7 mm
Option B:	86.4mm
Option C:	59.8 mm
Option D:	90.4 mm

Q6.	A rectangular beam of length L is prestressed by force P at slopping triangular cable profile with maximum eccentricity e at the center of span. The equivalent load will be given by
Option A:	$w = \frac{4Pe}{L}$
Option B:	$w = \frac{Pe}{L}$
Option C:	$w = \frac{4P}{L}$
Option D:	$w = \frac{4P}{Le}$
Q7.	What will be loss of stress in steel due to creep in concrete if creep coefficient is 1.6, stress in the level of steel is 10.2 N/mm^2 and modular ratio is 6 NOTE: use creep coefficient method
Option A:	20.42
Option B:	87.95
Option C:	97.92
Option D:	100.23
Q8.	Which of the following loss in prestressed concrete comes due to loss of moisture in the concrete ?
Option A:	Elastic deformation
Option B:	Anchorage sleep
Option C:	Shrinkage of concrete
Option D:	Friction
Q9.	What will be the loss in prestress due to shrinkage (in N/mm^2) if shrinkage strain is $1.345 X10^{-4}$ and $Ep= 2X10^5$?
Option A:	27.08
Option B:	28.34
Option C:	12.45
Option D:	87.15
Q10.	Which of the following loss in prestress is very immediate ?
Option A:	Anchorage slip
Option B:	Creep
Option C:	Elastic deformation
Option D:	Relaxation of steel
Q11.	In the pre cracking stage, the deflections are computed by:
Option A:	Prestressing force
Option B:	Sectional area
Option C:	Diameter
Option D:	Second moment of area

Q12.	When the loads in a concrete member are further increased than permitted, the crack widths are of an order of limit?
Option A:	0.01-0.02 mm^5
Option B:	0.05-0.10 mm^5
Option C:	0.03-0.05 mm^5
Option D:	0.07-0.08 mm^5
Q13.	The cracks appear when the tensile stresses at the soffit are equal to:
Option A:	Modulus of elasticity
Option B:	Modulus of rupture
Option C:	Tension modulus
Option D:	Reinforcement modulus
Q14.	If the direct stresses are compressive, then the magnitude of principal stresses in prestressed concrete member gets:
Option A:	Increased
Option B:	Decreased
Option C:	constant
Option D:	zero
Q15.	A prestressed concrete beam of span 10m of rectangular section, 120mm wide & 300mm deep a curved cable having an eccentricity of 100mm at the centre of span. Find the slope of cable of support?
Option A:	0.08 radians
Option B:	0.01 radians
Option C:	0.04 radians
Option D:	0.12 radians
Q16.	When the shear force due to ultimate loads is less than 0.5 times shear force of concrete then shear reinforcement is?
Option A:	Provided
Option B:	Not provided
Option C:	Made equal
Option D:	Made zero
Q17.	What is maximum shear stress at support for a prestressed concrete beam (span = 10 m) of a rectangular section, 120 mm wide and 300 mm deep, is axially prestressed by a cable carrying an effective force of 180 kN ? The beam supports a total uniformly distributed load of 5 kN/m which includes the self weight of the member.
Option A:	1.05 N/mm^2
Option B:	2.05 N/mm^2
Option C:	0.05 N/mm^2
Option D:	3.05 N/mm^2

Q18.	The spacing provided for shear reinforcement is given as:
Option A:	(A_{sv}0.87fy/0.4b)
Option B:	(A_{sv}0.91fy/0.4b)
Option C:	(A_{sv}0.12fy/0.4b)
Option D:	(A_{sv}0.23fy/0.4b)
Q19.	What should be provided in case of end zone reinforcements to prevent failure of corner zones?
Option A:	Ducts
Option B:	Anchorages
Option C:	Hair pin bars
Option D:	Transverse bars
Q20.	In case of end blocks, the steel case should be provided with bearing plates to overcome
Option A:	Overlapping
Option B:	Compression
Option C:	Tensioning
Option D:	Torsion
Q21.	The tensile stresses which tend to split the concrete are placed in the transverse direction to the
Option A:	Edge of member
Option B:	Span of member
Option C:	Axis of member
Option D:	End of member
Q22.	The secondary moment is also known as
Option A:	Parallel bending moment
Option B:	Eccentric bending moment
Option C:	Parasitic bending moment
Option D:	Elliptical bending moment
Q23.	The resultant moment is a section of
Option A:	Determinate prestressed structure
Option B:	Indeterminate structure
Option C:	Hollow structure
Option D:	Transverse prestressed structure
Q24.	In statistically indeterminate prestressed concrete structures it is possible to make simple modification to
Option A:	Predetermined tendon profile
Option B:	Elongated tendon profile
Option C:	Collapse tendon profile
Option D:	Ridge tendon profile

Q25.	To develop continuity the short and straight tendons may be used over the
Option A:	Spans
Option B:	Ridges
Option C:	Supports
Option D:	Edges

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	C
Q3.	B
Q4	A
Q5	C
Q6	A
Q7	C
Q8.	C
Q9.	A
Q10.	A
Q11.	B
Q12.	A
Q13.	A
Q14.	A
Q15.	C
Q16.	B
Q17.	A

Q18.	A
Q19.	C
Q20.	A
Q21.	C
Q22.	C
Q23.	B
Q24.	A
Q25.	C