Program: BE- Civil Engineering

Curriculum Scheme: Revised 2012

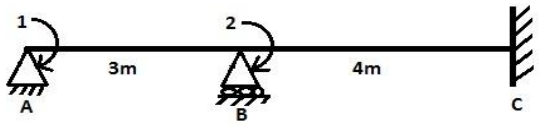
Examination: Third Year Semester V

Course Code: CEC501 and Course Name: STRUCTURAL ANALYSIS II

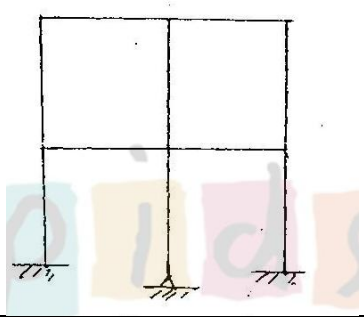
Time: 1 hour Max. Marks: 50

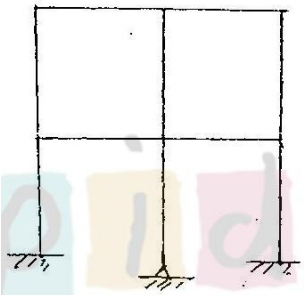
==========

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

Q1.	For beam shown below, the Stiffness coefficient S11 can be written as, 
Option A:	4EI/6
Option B:	9EI/8
Option C:	4EI/3
Option D:	7EI/3
Q2.	Which of the following relation about plastic moment is correct?
Option A:	Mp = Zp /fy
Option B:	Mp = Zp + fy
Option C:	Mp = Zpfy
Option D:	Mp = Zp – fy
Q3.	The carry over factor in a prismatic member whose far end is fixed
Option A:	0
Option B:	0.5
Option C:	0.75
Option D:	1
Q4.	Select the correct formula of fixed end moment of a fixed beam subjected to uniformly distributed load. (W = udl)
Option A:	$Wl^2/8$
Option B:	$Wl^2/36$
Option C:	$Wl^2/12$
Option D:	$Wl^2/4$
Q5.	What is shape factor of a Rectangular section?
Option A:	1
Option B:	1.5
Option C:	2
Option D:	2.5

Q6.	Select correct formula of Distribution factor from the given option (k- Stiffness factor, ΣK – Joint Stiffness Factor)
Option A:	K *ΣK
Option B:	ΣK/K
Option C:	K/ΣK
Option D:	K+ΣK
Q7.	What is the Area of BMD, when a simply supported beam of span 6m, subjected to a point load 50 kN at the center
Option A:	225
Option B:	255
Option C:	275
Option D:	300
Q8.	Shape factor is always:
Option A:	Less than 1
Option B:	Equal to Zero
Option C:	Equal to infinity
Option D:	Greater than 1
Q9.	Clapeyron's three moment theorem cannot be applied to
Option A:	Continuous beam
Option B:	Fixed Beam
Option C:	Rigid jointed frame
Option D:	Simple Pin-Jointed Frame
Q10.	The stiffness matrix of element is given as $\frac{2EI}{L}\begin{bmatrix}2 & 1\\ 1 & 2\end{bmatrix}$. Then Flexibility matrix is,
Option A:	$\frac{L}{5EI}\begin{bmatrix}2 & -1\\ -1 & 2\end{bmatrix}$
Option B:	$\frac{L}{6EI}\begin{bmatrix}2 & -1\\ -1 & 2\end{bmatrix}$
Option C:	$\frac{L}{2EI}\begin{bmatrix}2 & 1\\ 1 & 2\end{bmatrix}$
Option D:	$\frac{L}{3EI}\begin{bmatrix}2 & -1\\ -1 & 2\end{bmatrix}$
Q11.	A continuous beam ABC, with support A as fixed support and C is a roller support. If member AB is of length 8m and carries a UDL of 30kN/m and member BC is of length 4m and carries a UDL of 20kN/m. What will be the distribution factor for member CB?
Option A:	0.67

Option B:	0.25
Option C:	0.5
Option D:	1
Q12.	Find Degree of kinematical indeterminacy of following Structure 
Option A:	11
Option B:	15
Option C:	9
Option D:	10
Q13.	In flexibility method of analysis of Rigid jointed plane frame what we must know from the following options
Option A:	Degree of kinematical Indeterminacy
Option B:	Degree of statically Indeterminacy
Option C:	Sway or non-Sway
Option D:	Symmetrical or Un symmetrical Structure
Q14.	How many possible internal forces are developed in two hinged Arches?
Option A:	1
Option B:	2
Option C:	3
Option D:	4
Q15.	In Moment distribution method, if the far end is hinged Stiffness factor is equal to:
Option A:	3EI/L
Option B:	4EI/L
Option C:	2EI/L
Option D:	5EI/L
Q16.	When deflection due to temperature stresses is to be evaluated for a determinate frame ,we apply following at free end of the frame :
Option A:	UDL
Option B:	UVL
Option C:	Unit load

Option D:	Unit deflection
Q17.	Find Degree of statically indeterminacy of following Structure 
Option A:	10
Option B:	11
Option C:	15
Option D:	20
Q18.	Any Structure is said to be unstable, when:
Option A:	Degree of statically Indeterminacy is less than zero
Option B:	Degree of statically Indeterminacy is equal to zero
Option C:	Static equilibrium conditions are satisfied
Option D:	Degree of statically Indeterminacy is greater than 1
Q19.	Which of the following loads are termed as indirect loading?
Option A:	Change in Temperature
Option B:	Uniformly distributed load
Option C:	Point load
Option D:	Uniformly varying load
Q20.	If a Simple pin-jointed frame is having internal indeterminacy to one degree, what should we do to analyses it by force method
Option A:	Add one member
Option B:	Remove one member
Option C:	Add two members
Option D:	Don’t add or remove members
Q21.	Theorem of least work is also known as:
Option A:	Castigliano's first theorem
Option B:	Castigliano's second theorem
Option C:	Principle of virtual work
Option D:	Betty's theorem
Q22.	For evaluation of deflections due to temperature stresses in frames which of the following properties of member are required?
Option A:	Length and depth of member
Option B:	Weight of member
Option C:	Moment of inertia

Option D:	Tensile strength of member
Q23.	ABC Two hinged parabolic arches subjected to udl W kN/m over entire span, Where A and B are supports and C is at Crown. Find the vertical reaction at A.
Option A:	W/2
Option B:	Wl/2
Option C:	Wl/3
Option D:	Wl/4
Q24.	How many displacement components will be there in a beam, one end is hinged and other is having roller supports
Option A:	2
Option B:	1
Option C:	3
Option D:	4
Q25.	How many internal forces will be developed in a member of simple pin jointed frame (Trusses)?
Option A:	2
Option B:	1
Option C:	3
Option D:	4

Program: BE- Civil Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code: CEC501 and Course Name: STRUCTURAL ANALYSIS 2

Time: 1 hour Max. Marks: 50

==========

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

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