

Program: **BE- Civil Engineering**

Curriculum Scheme: **Revised 2012**

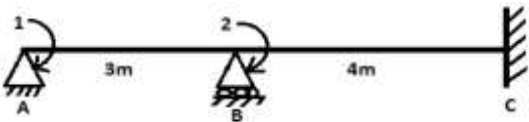
Examination: **Third Year Semester V**

Course Code: **CEC501** and Course Name: **STRUCTURAL ANALYSIS II**

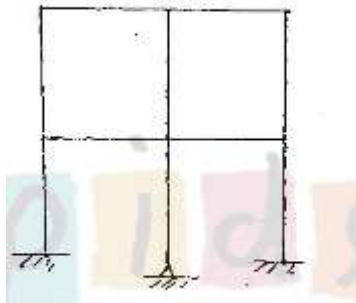
Time: 1 hour

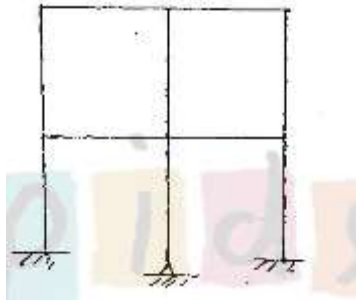
Max. Marks: 50

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

Q1.	For beam shown below, the Stiffness coefficient S_{11} 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:	$M_p = Z_p / f_y$
Option B:	$M_p = Z_p + f_y$
Option C:	$M_p = Z_p f_y$
Option D:	$M_p = Z_p - f_y$
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:	$K \cdot \Sigma K$
Option B:	$\Sigma K / K$
Option C:	$K / \Sigma K$
Option D:	$K + \Sigma K$
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