

University of Mumbai

Examination 2020

Program: Civil Engineering

Curriculum Scheme: Rev2016

Examination: Second Year Semester V

Course Code: CEC403 and Course Name: Structural Analysis-I

Time: 1 hour

Max. Marks: 50

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

Q1.	At hinge, the moments will be _____
Option A:	Maximum
Option B:	Minimum
Option C:	Uniform
Option D:	Zero
Q2.	What is variation in SFD, if the type of loading in the simply supported beam is U.D.L is _____
Option A:	Rectangle
Option B:	Linear
Option C:	Trapezoidal
Option D:	Parabolic
Q3.	The Castigliano's second theorem can be used to compute deflections _____
Option A:	In statically determinate structures only
Option B:	For any type of structure
Option C:	At the point under the load only
Option D:	For beams and frames only
Q4.	The principle of virtual work can be applied to elastic system by considering the virtual work of _____
Option A:	internal forces only
Option B:	External forces only
Option C:	internal as well as external forces
Option D:	Inclined Forces
Q5.	The rate of change of shear force is equal to _____
Option A:	Direction of load
Option B:	Change in BMD
Option C:	Intensity of loading
Option D:	Maximum bending
Q6.	In simply supported beams, the slope is _____ at supports.
Option A:	Minimum
Option B:	Maximum
Option C:	Zero
Option D:	Uniform

University of Mumbai
Examination 2020

Q7.	In simply supported beam deflection is maximum at _____
Option A:	Midspace
Option B:	Supports
Option C:	Point of loading
Option D:	Throughout
Q8.	The ratio of maximum deflection of a beam to its _____ is called stiffness of the beam.
Option A:	Load
Option B:	Span
Option C:	Slope
Option D:	Reaction at the support
Q9.	In cantilever beam the deflection occurs at _____
Option A:	Free end
Option B:	Point of loading
Option C:	Through out
Option D:	Fixed end
Q10.	Compute the maximum deflection at free end of a cantilever beam subjected to udl for entire span of L metres.
Option A:	$wl^4/8EI$
Option B:	$wl^4/4EI$
Option C:	$wl^3/8EI$
Option D:	$wl^2/6EI$
Q11.	Calculate the slope in a simply supported beam subjected to point load at centre. Take the EI into consideration.
Option A:	$Wl^3/4EI$
Option B:	$Wl^3/16EI$
Option C:	$Wl^3/8EI$
Option D:	$Wl^4/6EI$
Q12.	In a cantilever of span "L" subjected to a concentrated load of "W" at a distance of L/3 from free end. The deflection is _____
Option A:	$WL^3/3EI$
Option B:	$14WL^3/81EI$
Option C:	$WL^3/81EI$
Option D:	$8WL^3/81EI$
Q13.	Which of the following method is used to determine the slope and deflection at a point?
Option A:	Arithmetic increase method
Option B:	Mathematical curve setting
Option C:	Macaulay's method
Option D:	Lacey's method
Q14.	In cantilever beams, the deflection is zero at _____

University of Mumbai
Examination 2020

Option A:	Free end
Option B:	Fixed end
Option C:	At supports
Option D:	Through out
Q15.	For drawing ILD, what value of test load is assumed?
Option A:	1 unit
Option B:	Arbitrary
Option C:	Depends upon structure
Option D:	0
Q16.	If we require to construct ILD of vertical support at a pin joint, then according to Muller-Breslau principle, by which type of support should it be replaced?
Option A:	Roller guide
Option B:	Pin roller
Option C:	Fixed support
Option D:	Hinge
Q17.	What will be the shape of ILD curve for vertical reaction at left point in simply supported beam?
Option A:	Triangular
Option B:	Circular
Option C:	Rectangular
Option D:	Trapezoidal
Q18.	In influence line diagrams (ILD) :-
Option A:	Points remain fixed, position of load changes
Option B:	Points change, position of loads remain fixed
Option C:	position of load changes only
Option D:	Points change only
Q19.	Top most part of an arch is called _____
Option A:	Sofit
Option B:	Crown
Option C:	Center
Option D:	Abutment
Q20.	Shape of three hinged arch is always
Option A:	Hyperbolic
Option B:	Circular
Option C:	Parabolic
Option D:	Can be any arbitrary curve
Q21.	Internal bending moment generated in a three hinged arch is always:-
Option A:	0
Option B:	Infinite
Option C:	Varies
Option D:	Non zero value but remains constant

University of Mumbai
Examination 2020

Q22.	For a given material length, end conditions and equal area the shape of the column which is most efficient as per Euler's is _____
Option A:	Square
Option B:	Circular
Option C:	I section
Option D:	Tubular
Q23.	What is the Rankine's constant for cast iron?
Option A:	1/2000
Option B:	1/2400
Option C:	1/ 1600
Option D:	1/ 1800
Q24.	Unsymmetrical bending occurs due to _____
Option A:	The Beam cross section is unsymmetrical
Option B:	The shear Centre does not coincide with the neutral axis
Option C:	The Beam is subjected to twist in addition to bending moment
Option D:	The bending moment diagram is unsymmetrical
Q25.	The shear centre of the section is defined as the point _____
Option A:	Through which load must be applied to produce zero twisting moment on the section
Option B:	At which SF is zero
Option C:	At which SF is maximum
Option D:	At which SF is minimum