Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021

Course Name - Theory of Structures
Course Code -DCE405

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Answer all the questions. Each question carry one mark.

9. 1.What is the bending moment at end supports of a simply supported beam?

Mark only one oval.

- [ ] Maximum
- [ ] Minimum
- [ ] Zero
- [ ] Uniform

10. 2.What is the maximum shear force, when a cantilever beam is loaded with udl throughout?

Mark only one oval.

- w×l
- w
- w/l
- w+l

11. 3.Sagging, the bending moment occurs at the _____ of the beam.

Mark only one oval.

- At supports
- Mid span
- Point of contraflexure
- Point of emergence

12. 4.How do point loads and udl be represented in SFD?

Mark only one oval.

- Simple lines and curved lines
- Curved lines and inclined lines
- Simple lines and inclined lines
- Cant represent any more

13. 5._____ curve is formed due to bending of over hanging beams.

Mark only one oval.

- Elastic
- Plastic
- Flexural
- Axial

14. 6.The relation between slope and maximum bending moment is _____

Mark only one oval.

- Directly proportion
- Inversely proportion
- Relative proportion
- Mutual incidence

15. 7.Shear force is unbalanced _____ to the left or right of the section.

Mark only one oval.

- Horizontal force
- Vertical force
- Inclined force
- Conditional force

16. 8.SI units of shear force is _____

Mark only one oval.

- kN/m
- kN-m
- kN
- m/N

17. 9.Shear force diagram is _____ representation of shear force plotted as ordinate.

Mark only one oval.

- Scalar
- Aeria
- Graphical
- Statically

18. 10.Hogging is_____

Mark only one oval.

- Negative bending moment
- Positive shear force
- Positive bending moment
- Negative shear force

19. 11._____ positive/negative bending moments occur where shear force changes its sign.

Mark only one oval.

- Minimum
- Zero
- Maximum
- Remains same

20. 12.What is the other name for a positive bending moment?

Mark only one oval.

- Hogging
- Sagging
- Inflation
- Contraflexure

21. 13.Which of these is the correct way of sign convention for shear force?

Mark only one oval.

- R U P
- L U P
- R U N
- L D P

22. 14.At hinge, the moments will be _____

Mark only one oval.

- Maximum
- Minimum
- Uniform
- Zero

23. 15.What is variation in SFD, if the simply supported beam is carrying U.D.L

Mark only one oval.

- Rectangle
- Linear
- Trapezoidal
- Parabolic

24. 16.The shear force in a beam subjected to pure positive bending is _____

Mark only one oval.

- Positive
- Negative
- Zero
- Cannot determine

25. 17.A cantilever beam loaded with udl throughout, the maximum shear force occurs at____

Mark only one oval.

- Free end
- Fixed end
- At centre
- At point of contraflexure

26. 18.At the Point of contraflexure, what is the value of bending moment?

Mark only one oval.

- one
- zero
- three
- infinity

27. 19.A cantilever beam subjected to point load at its free end, the maximum bending moment develops at the _____ of the beam.

Mark only one oval.

- Free end
- Fixed end
- Centre
- Point of inflection

28. 20.Positive bending moment is known as _____.

Mark only one oval.

- Hogging
- Sagging
- Ragging
- Inflection

29. 21.Bending moment can be denoted by ____

Mark only one oval.

- K
- M
- N
- F

30. 22.Maximum bending moment in a cantilever beam subjected to udl (w)over the entire span (l).

Mark only one oval.

- wl
- wl3
- wl2
- w

31. 23.There won't be any hinge in the conjugate beam.

Mark only one oval.

- True
- false
- can not say
- none

32. 24.Units of deflection are _____

Mark only one oval.

- kNm
- kN/m
- kN
- m

33. 25.In cantilever beams, the deflection is zero at _____

Mark only one oval.

- Free and
- Fixed end
- At supports
- Through out

34. 26Slope in the beam at any point is measured in _____

Mark only one oval.

- Degrees
- Minutes
- Radians
- Metric tonnes

35. 27.Which of the following method is not used for determining slope and deflection at a point?

Mark only one oval.

- Moment area method
- Double integration method
- Isoheytal method
- Macaulay's method

36. 28.Slope is maximum at _____ in simply supported beams

Mark only one oval.

- Mid span
- Through out
- Supports
- At point of loading

37. 29.The maximum induced _____ stresses should be within the safe permissible stresses to ensure strength of the beam.

Mark only one oval.

- Tensile
- Compressive
- Bending
- Lateral

38. 30.In simply supported beams, the slope is _____ at supports.

Mark only one oval.

- Minimum
- Zero
- Maximum
- Uniform

39. 31.Stiffness of the beam is inversely proportional to the _____ of the beam.

Mark only one oval.

- Slope
- Support reaction
- Deflection
- Load

40. 32.In cantilever beam maximum deflection occurs at _____

Mark only one oval.

- Free end
- Point of loading
- Through out
- none

41. 33.The number of independent equations to be satisfied for static equilibrium of a plane structure is

Mark only one oval.

- 1
- 2
- 3
- 6

42. 34.A pin-jointed plane frame is unstable if

Mark only one oval.

- (m + r)
- m + r = 2j
- (m + r)>2j
- none of the above

43. 35.The number of independent equations to be satisfied for static equilibrium in a space structure is

Mark only one oval.

- 2
- 3
- 4
- 6

44. 36.The degree of kinematic indeterminacy of a pin-jointed space frame is

Mark only one oval.

- 2j-r
- 3j-r
- j-2r
- j-3r

45. 37.Principle of superposition is applicable when

Mark only one oval.

- deflections are linear functions of applied forces
- material obeys Hooke's law
- the action of applied forces will be affected by small deformations of the structure
- none of the above

46. 38.The carryover factor in a prismatic member whose far end is fixed is

Mark only one oval.

- 0
- 1/2
- 3/4
- 1

47. 39.While using three moments equation, a fixed end of a continuous beam is replaced

Mark only one oval.

- zero length
- infinite length
- zero moment of inertia
- none of the above

48. 40.Bending moment at any section in a conjugate beam gives in the actual beam

Mark only one oval.

- slope
- curvature
- deflection
- bending moment

49. 41.Which of the following is not the displacement method ?

Mark only one oval.

- Equilibrium method
- Column analogy method
- Moment distribution method
- Kani's method

50. 42.Which of the following methods of structural analysis is a displacement method ?

Mark only one oval.

- moment distribution method
- column analogy method
- three moment equation
- none of the above

51. 43.The fixed support in a real beam becomes in the conjugate beam a

Mark only one oval.

- roller support
- hinged support
- fixed support
- free end

52. 44.P=42EI/L2 is the equation of Euler's crippling load if

Mark only one oval.

- Both the ends are fixed
- Both the ends are hinged
- One end is fixed and other end is free
- One end is fixed and other end is hinged

53. 45.A close coil helical spring when subjected to a moment M having its axis along the axis of the helix

Mark only one oval.

- It is subjected to pure bending
- Its mean diameter will decrease
- Its number of coils will increase
- All the above

54. 46.A cantilever of length is subjected to a bending moment at its free end. If EI is the flexural rigidity of thesection, the deflection of the free end, is

Mark only one oval.

- ML/EI
- ML/2EI
- ML2/2EI
- ML2/3EI

55. 47.Gradually applied static loads do not change with time their

Mark only one oval.

- Magnitude
- Direction
- All the above
- Point of application

56. 48.The assumption in the theory of bending of beams is:

Mark only one oval.

- Material is homogeneous
- All the above
- Material is isotropic
- Young's modulus is same in tension as well as in compression

57. 49.The ratio of lateral strain to axial strain of a homogeneous material, is known

Mark only one oval.

- Yield ratio
- Hooke's ratio
- Poisson's ratio
- Plastic ratio

58. 50.An isolated load W is acting at a distance a from the left hand support, of a three hinged arch of span 2l andrise h hinged at the crown, the horizontal reaction at the support, is

Mark only one oval.

- Option 1
- Wa/h
- 2W/ha
- 2h/Wa

59. 51.A material is said to be perfectly elastic if

Mark only one oval.

- It regains its original shape on removal of the load
- It regains its original shape partially on removal of the load
- It does not regain its original shape at all
- None of these

60. 52.Pick up the correct statement from the following:

Mark only one oval.

- For a uniformly distributed load, the shear force varies linearly
- For a uniformly distributed load, B.M. curve is a parabola
- For a load varying linearly, the shear force curve is a parabola
- All the above

61. 53.Beams composed of more than one material, rigidly connected together so as to behave as one piece, areknown as

Mark only one oval.

- Composite beams
- Determinate beams
- Indeterminate beams
- Compound beams

62. 54.The point of contraflexure is the point where

Mark only one oval.

- B.M. changes sign
- B.M. is maximum
- B.M. is minimum
- S.F. is zero

63. 55.The equivalent length of a column of length L having one end fixed and the other end free, is

Mark only one oval.

- 2L
- L
- L/2
- Option 4

64. 56.A truss containing j joints and m members, will be a simple truss if

Mark only one oval.

- m = 2j − 3
- j = 2m − 3
- m = 3j − 2
- j = 3m − 2

65. 57.Stress may be defined as

Mark only one oval.

- Force per unit length
- Force per unit volume
- Force per unit area
- None of these

66. 58.The equivalent length of a column of length L, having both the ends hinged,

Mark only one oval.

- 2L
- L
- L/2
- Option 4

67. 59.The ratio of shear stress and shear strain of an elastic material, is

Mark only one oval.

- Modulus of Rigidity
- Shear Modulus
- Modulus of Elasticity
- Both A. and B.

68. 60.Which of the following is correct boundary condition for a beam supported by pin at both ends?

Mark only one oval.

- Displacement at both ends is non-zero
- Displacement at one of the end is non-zero
- Displacement at both ends is zero
- Can’t say