



VINAYAKA MISSION'S RESEARCH FOUNDATION, SALEM
(Deemed to be University under section 3 of the UGC Act 1956)

Ph.D Entrance Test – November – 2025

Faculty of Engineering & Technology / Civil Engineering

Instructions / Note:

1. Answer all the questions. Each question carries one mark.
2. No negative marks for wrong answers.
3. Read each question carefully and answer in the OMR sheet provided for each question with only blue/ black pen to fill the circles in the OMR Sheet.
4. Question number 1 - 35 questions belong to Research Methodology component and Question number 36-70 questions belong to the subject at PG level
5. Return the question paper along with the OMR sheet.

36. Bending moment at any section in a conjugate beam gives in the actual beam _____
- A. Slope
 - B. Curvature
 - C. Deflection
 - D. Bending moment
37. Castigliano's first theorem is applicable _____
- A. For statically determinate structures only
 - B. When the system behaves elastically
 - C. Only when principle of superposition is valid
 - D. None of the above
38. For a symmetrical two hinged parabolic arch, if one of the supports settles horizontally, then the horizontal thrust _____
- A. Is increased
 - B. Is decreased
 - C. Remains unchanged
 - D. Becomes zero
39. In column analogy method, the area of an analogous column for fixed beam of span 'L' and flexural rigidity 'EI' is taken as _____
- A. L/EI
 - B. $L/2EI$
 - C. $L/3EI$
 - D. $L/4EI$



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40. In the displacement method of structural analysis, the basic unknowns are _____
- A. Displacements
 - B. Force
 - C. Displacements and forces
 - D. None of the above
41. In the slope deflection equations, the deformations are considered to be caused by
- (i) Bending moment
 - (ii) Shear force
 - (iii) Axial force
- The correct answer is _____
- A. Only (i)
 - B. (i) and (ii)
 - C. (ii) and (iii)
 - D. (i), (ii) and (iii)
42. In the working stress method of R.C.C. design factor of safety used for concrete and steel are
Respectively _____
- A. 3 and 1.5
 - B. 3 and 1.85
 - C. 4 and 2
 - D. 4 and 1.85
43. The maximum spacing of vertical shear reinforcement for a beam of size 250 x 360 mm is

- A. 250 mm
 - B. 260 mm
 - C. 270 mm
 - D. 300 mm
44. For water retaining structures, minimum grade of concrete to be used is _____
- A. M 15
 - B. M 25
 - C. M 30
 - D. M 35
45. High carbon content in the steel causes _____
- A. Increase in tensile strength but decrease in ductility
 - B. Decrease in tensile strength but increase in ductility
 - C. Increase in tensile strength and ductility
 - D. Decrease in both tensile strength and ductility



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46. Which of these methods is the most appropriate if we want to determine a soil's water content?
- A. Pycnometer method
 - B. Oven drying method
 - C. Calcium carbide method
 - D. Sand bath method
47. The ratio of the volume of air to the total volume is _____
- A. Air content
 - B. Degree of saturation
 - C. Percentage air voids
 - D. Void ratio
48. The formula of plasticity Index _____
- A. $IP = WL - WP$
 - B. $IP = WP - WP$
 - C. $IP = WL + WP$
 - D. $IP = WP - WL$
49. What angle does a Coulomb's failure envelope make with its horizontal?
- A. Cohesion
 - B. The angle of internal friction
 - C. The angle of repose
 - D. None of the above
50. Application of Geotechnical Engineering _____.
- A. Foundation Design
 - B. Pavement Design
 - C. Underground Structure
 - D. All of the above
51. Estimation of quantities is done in which phase of construction project?
- A. Construction
 - B. Briefing
 - C. Designing
 - D. Tendering
52. Which type of construction projects can be termed as infrastructure construction projects?
- A. Highway Construction
 - B. High rise Construction
 - C. Bridge Construction
 - D. Nuclear Power Plant Construction



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53. Which of these is a type of resource of construction industry?
- A. Man power
 - B. Money
 - C. Materials
 - D. All of the above
54. A dummy activity _____
- A. Is artificially introduced
 - B. Is represented by a dotted line
 - C. Does not consume time
 - D. All the above
55. Which of these is not a stakeholder of construction project?
- A. Owner
 - B. Public
 - C. Engineer
 - D. Contractor
56. The process of killing microorganisms in water is called _____
- A. Coagulation
 - B. Sedimentation
 - C. Disinfection
 - D. Sterilization
57. Which of the following is a secondary air pollutant?
- A. Sulfur dioxide
 - B. Nitrogen dioxide
 - C. Photochemical smog
 - D. Dust particles
58. The maximum efficiency of BOD removal is achieved in _____
- A. Oxidation pond
 - B. Trickling filters
 - C. Aerated lagoons
 - D. Digestion tank
59. The distribution mains are designed for the _____
- A. Maximum daily demand
 - B. Maximum hourly demand
 - C. Average daily demand
 - D. Maximum hourly demand on the maximum day



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60. A plant that emits large amounts of SO_2 as an air pollutant is a _____
- A. Chlor-alkali plant
 - B. Iron and steel plant
 - C. Nitric acid plant
 - D. Sulphuric acid plant
61. The main principle of Surveying is to work from _____
- A. Part to the whole
 - B. Whole to the part
 - C. Lower to higher
 - D. Ascending to descending
62. _____ is a instrument which counts and display the number of paces.
- A. Pedometer
 - B. Pasometer
 - C. Speedometer
 - D. None of above
63. When the area of surveying is _____, the curvature of earth can be neglected.
- A. 300 sq. km
 - B. 500 sq. km
 - C. Less than 250 sq. km
 - D. 1000 sq. km
64. How many types of offset/s we take in the field during the survey ?
- A. 2
 - B. 3
 - C. 5
 - D. 4
65. What is the equivalent value in RB of 315° ?
- A. 315°
 - B. N 45° W
 - C. N 85° W
 - D. None of above
66. Percentage of free carbon in bitumen is _____
- A. equal to that in tar
 - B. less than that in tar
 - C. more than that in tar
 - D. none of the above
67. Camber is provided in the road for _____
- A. Counteracting the centrifugal force
 - B. Effective drainage
 - C. Getting better sighting distance
 - D. Getting least stopping distance



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68. For highways width of formation in plan area is _____
- A. 18 m
 - B. 15 m
 - C. 12 m
 - D. 9 m
69. Flexible pavement distributes the wheel load _____
- A. Through structural action
 - B. Through a set of layers grain by grain
 - C. Directly to sub-grade
 - D. None of the above
70. Longitudinal joints in rigid pavements should be of _____
- A. Tongue and groove type
 - B. Butt type
 - C. Weakened plate type
 - D. All the above

