CUET PG 2026 Civil & Structural Engineering Question Paper(Memory Based)

| **Time Allowed :**1 Hours 30 min | **Maximum Marks :**300 | **Total Questions :**75 |

General Instructions

1. The exam lasts 90 minutes (1 hour 30 minutes).

2. There are 75 Multiple Choice Questions (MCQs) to be answered.

3. +4 marks for every correct answer. -1 mark (negative marking) for every incorrect answer. 0 marks for unanswered or un-attempted questions.

4. For any discrepancy in questions, the English version is considered final (except for language-specific papers).

5. Click one of the four options to choose an answer.

6. You must click "Save & Next" to confirm your response. Only saved answers are considered for evaluation.

7. Use "Mark for Review & Next" to flag a question for later. You can unselect or change your answer using the "Clear Response" button.

8. All calculations must be done on the Rough Sheets provided at the centre. These must be returned to the invigilator after the exam.

1. What is the void ratio of a soil sample if its porosity is 25%?
(A) 0.25
(B) 0.33
(C) 0.50
(D) 0.75

2. Where does the maximum bending stress occur in a simply supported beam?
(A) At supports
(B) At mid-span
(C) At quarter span
(D) At free end

3. Which structural element ideally carries only axial forces?
(A) Beam
(B) Column
(C) Truss member
(D) Slab

4. Define the hydraulic radius in terms of wetted perimeter and area.
(A) $R = \frac{P}{A}$
(B) $R = \frac{A}{P}$
(C) $R = A \times P$
(D) $R = \frac{1}{AP}$

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5. What is the approximate unit weight of water used in hydraulic calculations?
(A) $9.81 \, \text{kN/m}^3$
(B) $1.0 \, \text{kN/m}^3$
(C) $100 \, \text{kN/m}^3$
(D) $0.98 \, \text{kN/m}^3$

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6. In laminar flow through pipes, the Reynolds number is typically less than what value?
(A) 500
(B) 1000
(C) 2000
(D) 4000

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7. What is the effect of soil compaction on its shear strength?
(A) Decreases shear strength
(B) No effect
(C) Increases shear strength
(D) Makes it zero

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8. Which assumption states that a plane section remains plane before and after bending?
(A) Hooke's Law
(B) Bernoulli's assumption
(C) Pascal's Law
(D) Newton's Law

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9. Calculate the maximum exit gradient for soil with a specific gravity of 2.5 and porosity of 0.35 to prevent piping failure.
(A) 0.92
(B) 1.15
(C) 0.75
(D) 1.50

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10. Which method is used to determine the collapse load in structural analysis?
(A) Working Stress Method
(B) Limit State Method
(C) Plastic Analysis Method
(D) Finite Element Method

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11. What is the primary purpose of the uniqueness theorem in elastic analysis?
(A) To determine material properties
(B) To ensure a unique solution for given boundary conditions
(C) To calculate stresses directly
(D) To simplify equations

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12. For a saturated soil mass, how is shear strength calculated using effective stress parameters?
(A) $\tau = c + \sigma \tan \phi$
(B) $\tau = c' + \sigma' \tan \phi'$
(C) $\tau = \sigma \tan \phi$
(D) $\tau = c' + \sigma \tan \phi'$