

CUET PG 2026 Mathematics 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 dimension of the vector space of all $n \times n$ real symmetric matrices?

- (A) n^2
(B) $\frac{n(n+1)}{2}$
(C) $\frac{n(n-1)}{2}$
(D) $2n$

2. If a function $f(x)$ is continuous on a closed interval $[a, b]$, is it necessarily uniformly continuous?

- (A) Yes, always uniformly continuous
(B) No, never uniformly continuous
(C) Only if differentiable
(D) Only if bounded

3. What is the value of the limit $\lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n$?

- (A) 1
(B) 0
(C) e
(D) ∞

4. How many elements of order 5 are there in a cyclic group of order 25?

- (A) 1
 - (B) 4
 - (C) 5
 - (D) 10
-

5. If A is a 3×3 matrix with eigenvalues 1, 2, 3, what is the determinant of A^2 ?

- (A) 6
 - (B) 12
 - (C) 18
 - (D) 36
-

6. Which theorem states that every bounded sequence in \mathbb{R}^n has a convergent subsequence?

- (A) Mean Value Theorem
 - (B) Bolzano–Weierstrass Theorem
 - (C) Rolle’s Theorem
 - (D) Taylor’s Theorem
-

7. What is the radius of convergence of the power series $\sum_{n=0}^{\infty} \frac{x^n}{n!}$?

- (A) 0
 - (B) 1
 - (C) ∞
 - (D) e
-

8. Is the set of all rational numbers \mathbb{Q} a countable or uncountable set?

- (A) Finite set
 - (B) Countable set
 - (C) Uncountable set
 - (D) Empty set
-

9. If $T : V \rightarrow W$ is a linear transformation, what is the relationship between $\text{rank}(T)$, $\text{nullity}(T)$, and $\dim(V)$?

- (A) $\text{rank}(T) + \text{nullity}(T) = \dim(W)$
 - (B) $\text{rank}(T) \times \text{nullity}(T) = \dim(V)$
 - (C) $\text{rank}(T) + \text{nullity}(T) = \dim(V)$
 - (D) $\text{rank}(T) = \text{nullity}(T)$
-

10. What is the condition for a group G to be Abelian based on the commutator subgroup?

- (A) Commutator subgroup is equal to G
 - (B) Commutator subgroup is trivial
 - (C) Commutator subgroup is infinite
 - (D) Commutator subgroup is cyclic
-

11. What is the value of the integral $\int_{-\infty}^{\infty} e^{-x^2} dx$?

- (A) 0
 - (B) 1
 - (C) $\sqrt{\pi}$
 - (D) π
-

12. In a metric space, is every Cauchy sequence necessarily a convergent sequence?

- (A) Yes, always
 - (B) No, not always
 - (C) Only in finite spaces
 - (D) Only for bounded sequences
-

13. What are the possible values for the rank of a 4×3 matrix?

- (A) 0, 1, 2, 3, 4
 - (B) 1, 2, 3, 4
 - (C) 0, 1, 2, 3
 - (D) Only 3
-

14. What is the order of the group of permutations S_3 ?

- (A) 3
 - (B) 6
 - (C) 9
 - (D) 12
-

15. Which partial differential equation represents the Laplace equation in two dimensions?

- (A) $\frac{\partial u}{\partial x} + \frac{\partial u}{\partial y} = 0$
 - (B) $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0$
 - (C) $\frac{\partial^2 u}{\partial t^2} = c^2 \frac{\partial^2 u}{\partial x^2}$
 - (D) $\frac{\partial u}{\partial t} = k \frac{\partial^2 u}{\partial x^2}$
-