

## Karnataka PGCET MCA 2026: Ultimate Mock Test 1

**Instructions:** This comprehensive mock test contains 111 uniquely curated questions mapped precisely to the 2025-26 KEA MCA Syllabus. Each question carries one mark. There is no negative marking.

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### SECTION 1: MATHEMATICS

(Syllabus coverage: Algebra, Co-Ordinate Geometry, Boolean Algebra, Trigonometry, Probability and Statistics)

1. What is the determinant of the  $2 \times 2$  matrix  $\begin{bmatrix} 5 & 2 \\ 3 & 4 \end{bmatrix}$ ?

(1) 14 | (2) 26 | (3) 10 | (4) 20

2. In Boolean algebra, the expression  $A + A \cdot B$  simplifies to:

(1) B | (2) 1 | (3) A | (4) 0

3. The distance between the points  $(2, 3)$  and  $(6, 6)$  is:

(1) 4 units | (2) 5 units | (3) 7 units | (4) 25 units

4. If  ${}^nC_2 = 15$ , then the value of  $n$  is:

(1) 5 | (2) 6 | (3) 7 | (4) 8

5. The equation of a circle with center  $(0,0)$  and radius  $r$  is:

(1)  $x^2 + y^2 = r^2$  | (2)  $x + y = r$  | (3)  $x^2 - y^2 = r^2$  | (4)  $xy = r^2$

6. Evaluate the Boolean expression:  $(X + Y) \cdot (X + Y')$

(1) Y | (2) X | (3) XY | (4) 1

7. If  $\sin(\theta) = 3/5$ , what is the value of  $\cos(\theta)$  assuming  $\theta$  is in the first quadrant?

(1)  $4/5$  | (2)  $2/5$  | (3)  $5/3$  | (4)  $1/5$

8. Two dice are thrown simultaneously. What is the probability of getting a sum of 7?

(1)  $1/6$  | (2)  $1/12$  | (3)  $1/36$  | (4)  $1/4$

9. The geometric mean of 4 and 16 is:

(1) 10 | (2) 8 | (3) 12 | (4) 64

10. Which of the following represents the midpoint of the line segment joining  $(x_1, y_1)$  and  $(x_2, y_2)$ ?

(1)  $((x_1 - x_2)/2, (y_1 - y_2)/2)$  | (2)  $((x_1 + x_2)/2, (y_1 + y_2)/2)$  | (3)  $(x_1 + x_2, y_1 + y_2)$  | (4)  $(x_1 x_2, y_1 y_2)$

**11. Find the roots of the quadratic equation  $x^2 - 5x + 6 = 0$ .**

(1) 2, 3 | (2) -2, -3 | (3) 1, 6 | (4) -1, -6

**12. In statistics, the measure of the asymmetry of the probability distribution of a real-valued random variable is called:**

(1) Kurtosis | (2) Standard Deviation | (3) Variance | (4) Skewness

**13. A matrix having only one row is called a:**

(1) Column matrix | (2) Square matrix | (3) Row matrix | (4) Diagonal matrix

**14. What is the slope of the line  $3x - 4y + 5 = 0$ ?**

(1)  $3/4$  | (2)  $-3/4$  | (3)  $4/3$  | (4)  $-4/3$

**15. De Morgan's Law states that  $(A \cdot B)'$  is equal to:**

(1)  $A' \cdot B'$  | (2)  $A' + B'$  | (3)  $A + B$  | (4)  $A \cdot B$

**16. The value of  $\log_2(32)$  is:**

(1) 4 | (2) 5 | (3) 16 | (4) 64

**17. If a matrix  $A$  is symmetric, then:**

(1)  $A = A^T$  | (2)  $A = -A^T$  | (3)  $A = A^{-1}$  | (4)  $A = I$

**18. What is the sum of the first 10 terms of the arithmetic progression 2, 4, 6, 8, ...?**

(1) 100 | (2) 110 | (3) 120 | (4) 90

**19. Which geometric transformation alters the size of an object?**

(1) Translation | (2) Rotation | (3) Reflection | (4) Scaling

**20. The trigonometric identity  $\tan^2(\theta) + 1$  is equal to:**

(1)  $\sin^2(\theta)$  | (2)  $\sec^2(\theta)$  | (3)  $\csc^2(\theta)$  | (4)  $\cot^2(\theta)$

**21. In a class of 50 students, 30 like Math and 25 like Physics. If 10 like both, how many like neither?**

(1) 5 | (2) 10 | (3) 15 | (4) 0

**22. An event that has a probability of 1 is known as a/an:**

(1) Impossible event | (2) Dependent event | (3) Sure event | (4) Mutually exclusive event

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## SECTION 2: COMPUTER AWARENESS

(Syllabus coverage: Computer Basics, Data Representation, Binary Arithmetic, Operating Systems)

**23. Which of the following data structures operates on a Last-In-First-Out (LIFO) principle?**

(1) Queue | (2) Linked List | (3) Stack | (4) Binary Tree

**24. What is the 2's complement of the binary number 101101?**

(1) 010010 | (2) 010011 | (3) 101110 | (4) 010100

**25. Which of the following sorting algorithms has a worst-case time complexity of  $O(n \log n)$ ?**

(1) Bubble Sort | (2) Selection Sort | (3) Merge Sort | (4) Insertion Sort

**26. In Object-Oriented Programming (OOP), the concept of hiding internal implementation details is known as:**

(1) Polymorphism | (2) Inheritance | (3) Encapsulation | (4) Overloading

**27. The time complexity of accessing an element in a Hash Table (assuming a good hash function) is:**

(1)  $O(1)$  | (2)  $O(n)$  | (3)  $O(\log n)$  | (4)  $O(n^2)$

**28. Which of the following memory types is the fastest?**

(1) Main Memory (RAM) | (2) Magnetic Disk | (3) Cache Memory | (4) CPU Registers

**29. The decimal equivalent of the hexadecimal number '1F' is:**

(1) 29 | (2) 30 | (3) 31 | (4) 32

**30. Which of the following Operating Systems is open-source?**

(1) Windows 11 | (2) macOS | (3) Linux | (4) iOS

**31. In floating-point representation, a number is typically divided into two parts:**

(1) Mantissa and Exponent | (2) Base and Radix | (3) Integer and Fraction | (4) Sign and Magnitude

**32. The primary job of an Operating System's Kernel is to:**

(1) Compile code | (2) Manage hardware and system resources | (3) Scan for malware | (4) Provide a GUI

**33. ASCII uses how many bits to represent a standard character?**

(1) 4 bits | (2) 7 or 8 bits | (3) 16 bits | (4) 32 bits

**34. Addition of binary 1101 and 1011 yields:**

(1) 11000 | (2) 10110 | (3) 11100 | (4) 10101

**35. A software program that translates a high-level language into machine code all at once is called a:**

(1) Interpreter | (2) Compiler | (3) Assembler | (4) Debugger

**36. In a relational database, an entity's unique identifier is called the:**

(1) Foreign Key | (2) Super Key | (3) Primary Key | (4) Alternate Key

**37. Which data structure is most suitable for implementing a priority queue?**

(1) Stack | (2) Array | (3) Binary Heap | (4) Linked List

**38. What does 'SQL' stand for?**

(1) Standard Query Language | (2) Sequential Query Logic | (3) Structured Query Language | (4) System Question Language

**39. Multi-programming Operating Systems were developed to maximize the utilization of the:**

(1) Hard Disk | (2) CPU | (3) Printer | (4) Monitor

**40. The binary equivalent of decimal 45 is:**

(1) 101101 | (2) 110101 | (3) 100111 | (4) 111000

**41. A 'Nibble' represents:**

(1) 2 bits | (2) 4 bits | (3) 8 bits | (4) 16 bits

**42. Which of the following is NOT an application software?**

(1) Microsoft Word | (2) Adobe Photoshop | (3) Linux Ubuntu | (4) VLC Media Player

**43. A process that is currently waiting for input/output is in the:**

(1) Running state | (2) Ready state | (3) Blocked/Waiting state | (4) Terminated state

**44. Which algorithm is based on the 'Divide and Conquer' technique?**

(1) Bubble Sort | (2) Quick Sort | (3) Insertion Sort | (4) Linear Search

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## **SECTION 3: ANALYTICAL ABILITY AND LOGICAL REASONING**

*(Syllabus coverage: Logical Reasoning, quantitative reasoning, and visuospatial reasoning)*

**45. [Visuospatial - Dice Logic]** Two positions of a dice are shown. When the number '2' is at the bottom, what number will be at the top?

*[Visual Description: Dice A shows faces 1, 3, 5. Dice B shows faces 1, 2, 4.]*

(1) 3 | (2) 4 | (3) 5 | (4) 6

**46. [Visuospatial - Pattern Completion]** Select the figure that continues the series:

*[Visual Description: A triangle with a dot. Step 1: Dot is at the top apex. Step 2: Dot is at the bottom right corner. Step 3: Dot is at the bottom left corner. Step 4: ?]*

(1) Top apex | (2) Center | (3) Bottom right | (4) Bottom left

**47. [Visuospatial - Water Image]** What is the correct water image of the word 'CODE'?

(1) EDOC | (2) CODE (inverted) | (3) ∩O□E | (4) CODE

**48. Identify the next number in the series: 3, 8, 15, 24, 35, ...**

(1) 44 | (2) 46 | (3) 48 | (4) 50

**49. In a certain code, 'ALGORITHM' is written as 'BKHPSJUIIN'. How is 'NETWORK' written in that code?**

(1) MDUVNQJ | (2) OFUXPSL | (3) ODUVNQL | (4) MFUXPSJ

**50. Pointing to a woman, a man says, "She is the daughter of the only child of my grandmother." How is the woman related to the man?**

(1) Mother | (2) Sister | (3) Aunt | (4) Cousin

**51. A student walks 5 km East, turns right and walks 3 km, turns right again and walks 5 km. How far is he from his starting point?**

(1) 3 km | (2) 5 km | (3) 8 km | (4) 13 km

**52. If 5 machines take 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?**

(1) 1 minute | (2) 5 minutes | (3) 100 minutes | (4) 500 minutes

**53. Analogy | RAM : Volatile :: ROM : \_\_\_\_\_**

(1) Dynamic | (2) Fast | (3) Non-Volatile | (4) Erasable

**54. Six developers are sitting in a circle facing the center. A is next to B. C is opposite to A. D is to the immediate right of C. Who is sitting to the immediate left of A?**

(1) B | (2) D | (3) Cannot be determined | (4) C

**55. Statement: All computers are machines. No machine is organic. Conclusion: I. No**

**computer is organic. II. Some machines are computers.**

(1) Only I follows | (2) Only II follows | (3) Both I and II follow | (4) Neither follows

**56. [Visuospatial - Embedded Figures] Identify the option figure embedded in the 'Z' figure.**

*[Visual Description: Figure Z is a complex web of intersecting lines. Option 2 is a perfect five-point star hidden within the web.]*

(1) Option A | (2) Option B | (3) Option C | (4) Option D

**57. What is the angle between the hands of a clock at 3:30?**

(1) 75 degrees | (2) 90 degrees | (3) 105 degrees | (4) 60 degrees

**58. [Data Table Reasoning] Three servers handle traffic. Server A: 400 req/min. Server B: 600 req/min. Server C: 200 req/min. If a total of 6000 requests are sent simultaneously across all three based on capacity, how many does Server B handle?**

(1) 1000 | (2) 2000 | (3) 3000 | (4) 4000

**59. If 'A' means '+', 'B' means '-', 'C' means 'x', and 'D' means '/', evaluate: 10 C 2 A 5 B 3**

(1) 22 | (2) 25 | (3) 18 | (4) 20

**60. Find the odd one out:**

(1) Python | (2) Java | (3) C++ | (4) HTML

**61. A train running at 90 km/hr crosses a pole in 10 seconds. What is the length of the train?**

(1) 150 m | (2) 200 m | (3) 250 m | (4) 300 m

**62. If today is Sunday, what day will it be after 100 days?**

(1) Monday | (2) Tuesday | (3) Wednesday | (4) Thursday

**63. [Visuospatial - Paper Folding] A square paper is folded in half horizontally, then vertically, and a triangle is cut from the center. Unfolded, it shows:**

*[Visual Description: Option 1 shows a square with four triangular holes pointing towards the center.]*

(1) Four triangles | (2) One square | (3) Two triangles | (4) A large circle

**64. Complete the series: 8, 27, 64, 125, ...**

(1) 150 | (2) 196 | (3) 216 | (4) 256

**65. In a row of students, X is 10th from the left and Y is 15th from the right. If they swap**

places, X becomes 20th from the left. Total students in the row?

(1) 34 | (2) 35 | (3) 36 | (4) 40

**66. Analogy | Firewall : Security :: Compiler : \_\_\_\_\_**

(1) Translation | (2) Speed | (3) Memory | (4) Web Browsing

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## **SECTION 4: GENERAL AWARENESS**

*(Syllabus coverage: Business, Finance, Industry, Transportation, Scientific inventions, Governance, Healthcare, Cultural dimensions, Entrepreneurship, Business Communication)*

**67. In the tech and startup ecosystem, a "Unicorn" refers to:**

(1) A company with zero competition | (2) A privately held startup valued over \$1 billion | (3) A state-owned IT enterprise | (4) A hardware manufacturing unit

**68. The "Kavach" system in India is related to:**

(1) Cybersecurity for banking | (2) Automated train protection and collision avoidance | (3) Healthcare insurance | (4) Drone defense

**69. Who is widely credited as the inventor of the World Wide Web (WWW)?**

(1) Bill Gates | (2) Steve Jobs | (3) Tim Berners-Lee | (4) Alan Turing

**70. In Business Communication, what does a "Memorandum" (Memo) primarily serve as?**

(1) An external press release | (2) A formal internal communication document | (3) A marketing brochure | (4) A legal contract

**71. Which Indian organization is responsible for launching space missions like Chandrayaan and Mangalyaan?**

(1) DRDO | (2) HAL | (3) ISRO | (4) BARC

**72. The term "Bootstrapping" in entrepreneurship means:**

(1) Merging two companies | (2) Starting a business with personal funds and without external capital | (3) Firing the management board | (4) Outsourcing IT services

**73. The Headquarters of the Reserve Bank of India (RBI) is located in:**

(1) New Delhi | (2) Mumbai | (3) Bengaluru | (4) Chennai

**74. The "Bharat 6G Alliance" is a recent initiative launched to position India as a global leader in:**

(1) Agricultural tech | (2) Future telecommunications and networking | (3) Solar energy | (4)

Vaccine production

**75. "Kinesics" in the context of business communication refers to the study of:**

(1) Time management | (2) Vocal tone | (3) Body language and facial expressions | (4) Spatial distance

**76. Which state is considered the "Silicon Valley of India" due to its massive IT industry export?**

(1) Maharashtra | (2) Telangana | (3) Karnataka | (4) Tamil Nadu

**77. The Goods and Services Tax (GST) is an example of:**

(1) Direct Tax | (2) Wealth Tax | (3) Indirect Tax | (4) Corporate Tax

**78. "B2B" stands for:**

(1) Business to Buyer | (2) Business to Business | (3) Buyer to Buyer | (4) Broadband to Business

**79. The Nobel Prize in Physics is awarded by institutions in which country?**

(1) USA | (2) UK | (3) Sweden | (4) Switzerland

**80. What does 'FDI' stand for in global business?**

(1) Foreign Direct Investment | (2) Federal Digital Initiative | (3) Financial Deposit Insurance | (4) Future Data Integration

**81. The "Right to Information" (RTI) Act in India was enacted to promote:**

(1) E-commerce | (2) Transparency and accountability in governance | (3) Startup funding | (4) Copyright protection

**82. An 'Angel Investor' is:**

(1) An employee who works for free | (2) An affluent individual who provides capital for a startup | (3) A government tax auditor | (4) A bank manager

**83. The International Day of Yoga is celebrated globally on:**

(1) June 5 | (2) June 21 | (3) July 1 | (4) December 1

**84. "ChatGPT" is a prominent example of:**

(1) Virtual Reality hardware | (2) Generative Artificial Intelligence | (3) Blockchain ledger | (4) Quantum computing

**85. The term "Semantic Barrier" in communication is caused by:**

(1) Physical distance | (2) Differences in interpretation of words and symbols | (3) Loud noise | (4) Poor internet connection

**86. Which famous Indian businessman founded the Tata Group?**

(1) Ratan Tata | (2) J.R.D. Tata | (3) Jamsetji Tata | (4) Cyrus Mistry

**87. ONDC (Open Network for Digital Commerce) is a Government of India initiative aimed at democratizing:**

(1) E-commerce | (2) Stock trading | (3) Real estate | (4) Healthcare

**88. "Liquidity Trap" is an economic situation where:**

(1) Inflation is high | (2) Monetary policy becomes ineffective as interest rates approach zero | (3) Banks stop giving loans | (4) Stock market crashes

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## **SECTION 5: GENERAL ENGLISH**

*(Syllabus coverage: Basic grammar, vocabulary, comprehension, synonyms, antonyms, sentence correction, word and phrases, jumbled paragraph)*

**89. Choose the exact synonym for 'BENEVOLENT'.**

(1) Malevolent | (2) Cruel | (3) Kind | (4) Apathetic

**90. Choose the exact antonym for 'OBSOLETE'.**

(1) Ancient | (2) Contemporary | (3) Extinct | (4) Outdated

**91. Choose the grammatically correct sentence.**

(1) She doesn't likes apples. | (2) She don't like apples. | (3) She doesn't like apples. | (4) She do not likes apples.

**92. What is the meaning of the idiom "To bite the bullet"?**

(1) To eat something hard | (2) To face a difficult situation bravely | (3) To act aggressively | (4) To avoid a problem

**93. One-word substitution: A person who hates mankind.**

(1) Altruist | (2) Misanthrope | (3) Philanthropist | (4) Optimist

**94. Identify the error in the sentence: "He is one of the best player (A) / in the team (B) / and works very hard (C) / No Error (D)."**

(1) A | (2) B | (3) C | (4) D

**95. Fill in the blank: The software update is superior \_\_\_\_\_ the older version.**

(1) than | (2) from | (3) to | (4) by

**96. Choose the correct passive voice: "The programmer is writing the code."**

(1) The code is written by the programmer. | (2) The code was being written by the programmer. | (3) The code is being written by the programmer. | (4) The code has been written by the programmer.

**97. Rearrange the parts (P, Q, R, S) to form a meaningful sentence:**

P: compiling the software

Q: took longer

R: due to the bugs

S: than expected

(1) P Q S R | (2) Q P S R | (3) S Q R P | (4) R P Q S

**98. Choose the correctly spelled word.**

(1) Accomodation | (2) Acommodation | (3) Accommodation | (4) Accomodation

**99. Fill in the blank: I have been coding in Python \_\_\_\_\_ 2018.**

(1) for | (2) since | (3) from | (4) until

**100. Analogy: INK : PEN :: \_\_\_\_\_ : BRUSH**

(1) Canvas | (2) Painter | (3) Paint | (4) Art

**101. "A piece of cake" means:**

(1) Very difficult | (2) Very sweet | (3) Very easy | (4) A small portion

**102. Replace the underlined phrase to improve the sentence: *If I was you, I would learn Java.***

(1) If I am you | (2) If I were you | (3) If I had been you | (4) No improvement

**103. What is the antonym of 'GENUINE'?**

(1) Real | (2) Fake | (3) Authentic | (4) Sincere

**104. Fill in the blank: Each of the developers \_\_\_\_\_ given a laptop.**

(1) was | (2) were | (3) are | (4) have

**105. Choose the correct prefix to make the word 'REVERSIBLE' opposite in meaning.**

(1) Un- | (2) Dis- | (3) Ir- | (4) In-

**106. "To hit the nail on the head" means:**

(1) To be physically aggressive | (2) To describe exactly what is causing a situation | (3) To make a syntax error | (4) To work hard

**107. Complete the sentence: The server belongs \_\_\_\_\_ the company.**

(1) with | (2) for | (3) to | (4) by

**108. Choose the correctly punctuated sentence:**

(1) "Run the script," he said. | (2) "Run the script" he said. | (3) "Run the script", he said. | (4) "Run the script." he said.

**109. Choose the exact synonym for 'ENIGMA'.**

(1) Solution | (2) Puzzle | (3) Clarity | (4) Routine

**110. "Spill the beans" means:**

(1) Drop food | (2) Reveal a secret | (3) Act clumsily | (4) Corrupt the database

**111. One-word substitution: The study of the origin and history of words.**

(1) Philology | (2) Etymology | (3) Entomology | (4) Epistemology

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