

Seat No.

Total No. of Pages : 24

P. G. Entrance Examination, 2025**MCA (Science)****Subject Code : 58729**

Day and Date : Wednesday, 14-May-2025**Total Marks : 100****Time : 10.30 am to 12.00 pm**

Instructions :

- 1) All questions are compulsory.
 - 2) Each question carries 1 mark.
 - 3) Answers should be marked in the given OMR answer sheet by darkening the appropriate option.
 - 4) Follow the instructions given on OMR sheet.
 - 5) Rough work shall be done on the sheet provided at the end of question paper.
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Q1. What is the theme of the World Health Day 2024?

- a) My Health, My Right
- b) Health for All
- c) Our planet, our health
- d) Building a Fairer, Healthier World

Q2. In which country World Governments Summit 2024 was organized?

- | | |
|----------|--------------|
| a) Spain | b) Singapore |
| c) Dubai | d) Sweden |

- Q3. National Safety Week, observed annually from _____
- a) April 4th to April 10th
 - b) March 4th to March 10th
 - c) January 1st to January 8th
 - d) December 1st to December 8th
- Q4. The father of Indian missile technology is _____
- a) Dr Homi Bhabha
 - b) Dr Chidambaram
 - c) Dr U.R. Rao
 - d) Dr A.P.J. Abdul Kalam
- Q5. Where is the headquarter of the National Association of Software and Service Companies (NASSCOM)?
- a) Bangalore
 - b) Chandigarh.
 - c) New Delhi.
 - d) Hyderabad.
- Q6. Who is the author of "Poverty and Famines"?
- a) Amartya Sen
 - b) J. R. Harris
 - c) Abhijit Banerjee
 - d) K. N. Raj

Q7. Which city is the host of the ODI Cricket World Cup 2023?

- a) Chennai b) Mumbai
- c) Ahmedabad d) Kolkata

Q8. Who was the 11th Chief Minister of Bihar among the Bharat Ratna 2024 awardees?

- a) Karpoori Thakur b) L. K. Advani
c) P. V. Narasimha Rao d) Charan Singh

Q9. From where was the national emblem of India taken?

- a) Rajgir b) Sarnath
- c) Vaishali d) Patliputra

Q10. Which Indian Government Department has developed the AI-based facial recognition tool named ASTR¹?

- National Informatics Centre (NIC)
- Department of Financial Services
- Department of Economic Affairs
- Department of Telecommunication

Q11. What is the day on 1 June, 2080?

- a) Monday b) Tuesday
- c) Saturday d) Thursday

Q12. If in a certain language, GAMBLE is coded as FBLCKF, how is FLOWER coded in that code?

- a) GMPVDS b) GMPSDV
- c) EKNVDQ d) EMNXDS

Q13. In a row of girls, Sita and Monika occupy the ninth place from the right end and tenth place from the left end, respectively. If they interchange their places, Sita and Monika occupy seventeenth place from the right and eighteenth place from the left, respectively. How many girls are there in the row?

- a) 24 b) 25
- c) 26 d) 27

Q14. Which number would fill the empty space in the series; 4, 7, 12, 19, __, 39?

- a) 28 b) 26
- c) 24 d) 22

Q15. Pointing to a photograph, a man said, "I have no brother, and that man's father is my father's son." Whose photograph was it?

- a) His son b) His father
- c) His brother d) His nephew

Q16. Peter is in the East of Tom and Tom is in the North of John. Mike is in the South of John then in which direction of Peter is Mike?

- a) South-East b) South-West
- e) South d) North-East

Q17. **Statement:** "You are hereby appointed as a software engineer with a probation period of six months and your skills and performance will be reviewed at the end of the probation period for confirmation." A line written in an appointment letter.

Assumptions:

- I) The performance of the candidate is not known at the time of appointment.
 - II) An individual is likely to prove his worth during the probation period.
- a) Only I is implicit
 - b) Either I or II is implicit
 - c) Neither I nor II is implicit
 - d) Both I and II are implicit

Q18. **Assertion (A) :** James Watt invented the steam engine.

Reason (R) : It was invented to pump out the water from the flooded mines.

- a) Both A and R are true and R is the correct explanation of A.
- b) Both A and R are true, but R is not the correct explanation of A.
- c) A is true, but R is false.
- d) A is false, but R is true,

Q19. If you are a fitness walker, you don't need to go to a health gym. You also don't need any fitness equipment for workout. All you need is a pair of comfortable athletic shoes.

This paragraph supports which of the following statements;

- a) Fitness walking is better than weight lifting
- b) Walking outdoors provides more health benefits than walking indoors
- c) Fitness walking is an effective and convenient form of exercise
- d) Poorly designed shoes can cause foot injuries

Q20. If DELHI is coded as 73541 and CALCUTTA as 82589662, how can CALICUT be coded?

- a) 5279431
- b) 5978213
- c) 8251896
- d) 8543691

Q21. In a certain code, 2 is coded as P, 3 as N, 9 as Q, 5 as R, 4 as A and 6 as B. How is 599423 coded in that code?

- a) EIIDBC
- b) RQPANB
- c) RQQAPN
- d) RPPBQN

Q22. If cook is called butler, butler is called manager, manager is called teacher, teacher is called clerk and clerk is called principal, who will teach in a class?

- a) cook
- b) manager
- c) teacher
- d) clerk

Q23. A and B are brothers. C and D are sisters. A's son is D's brother. How is B related to C?

- a) Father
- b) Brother
- c) Grandfather
- d) Uncle

Q24. In the following alphabet series, which letter is eighth to the left of sixteenth letter from the right end?

A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z

- a) B
- b) S
- c) C
- d) H

Q25. Select the combination of numbers so that letters arranged accordingly will form a meaningful word.

V A R S T E
1 2 3 4 5 6

- a) 2, 3, 1, 6, 4, 5
- b) 4, 5, 2, 3, 1, 6
- c) 6, 3, 4, 5, 2, 1
- d) 3, 2, 4, 5, 6, 1

Q26. How many 5's are there in the following sequence which are immediately followed by 3 but not immediately preceded by 7?

8 9 5 3 2 5 3 8 5 5 6 8 7 3 3 5 7 7 5 3 6 5 3 3 5 7 3 8

- a) One
- b) Two
- c) Three
- d) Four

- Q27. If + means divided by, - means multiplied by, x means minus and / means plus, which of the following will be the value of the expression $16/8-4+2\times 4$?
- a) 16 b) 28
c) 32 d) 44
- Q28. In a chess tournament each of six players will play every other player exactly once. How many matches will be played during the tournament?
- a) 12 b) 15
c) 30 d) 36
- Q29. While travelling in your car, certain persons stop you on the way asking you to take an injured child to the hospital. You should:
- a) ask them to leave your way and then drive away
b) ask them to first call the police
c) immediately take the child to hospital
d) get out of the car and ask some other person to help them
- Q30. How many times in a day, the hands of a clock are straight?
- a) 22 b) 24
c) 44 d) 48
- Q31. If the price of the sugar is decreased by 10% and the sales are increased by 15%, then what is the net effect of the revenue?
- a) +5% b) +3.5%
c) -3.5% d) +7.5%

- Q32. The population in a Kolhapur city was 100000. It was noted that every year there was an increase of 10% per year. Find the population of the Kolhapur city at the start of the third year.
- a) 121000 b) 133100
- c) 120000 d) 118800
- Q33. In a Baramati city 30% were children, while 45% were men. 25000 people in the Baramati city were women. What is the total number of men and children in the Baramati city?
- a) 65000 b) 75000
- c) 85000 d) 90000
- Q34. In an election between two candidates, one gets 55% of the total valid votes, 20% of the votes were invalid. If the total number of votes was 7500, the number of valid votes that the other candidates got, was?
- a) 2700 b) 2900
- c) 3000 d) 3100
- Q35. A man divides Rs. 8600 among 5 sons, 4 daughters and 2 nephews. If each daughter receives four times as much as each nephew, and each son receives five times as much as each nephew, how much does each daughter receive?
- a) Rs. 600
- b) Rs. 1600
- c) Rs. 1800
- d) Rs. 800

Q36. The difference between simple and compound interests compounded annually on a certain sum of money for 2 years at 4% per annum is Rs. 1. The sum is _____

- a) Rs. 650 b) Rs. 625
- c) Rs. 640 d) Rs. 630

Q37. If 12 men and 16 boys can do a piece of work in 5 days; 13 men and 24 boys can do it in 4 days, then the ratio of the daily work done by a man to that of a boy is:

- a) 2: 1 b) 3: 1
- c) 3:2 d) 5:4

Q38. From a group of 6 men and 4 women we have to form a committee of 5 people. How many committees are possible if there are to be 3 men and 2 women?

- a) 180 b) 140
- c) 130 d) 120

Q39. Find out the number of distinctive words that can be formed using the word GOOD.

- a) 16 b) 24
c) 28 d) 48

- Q40. The ratio of alcohol: water in a mixture is 4:3. If we add 5 liters of water to the mixture, this ratio becomes 4: 5. Then the quantity or concentration of alcohol in the mixture is:
- a) 0.2 litres b) 2 litres
- c) 8 litres d) 10 litres
- Q41. The present ages of P and Q are represented in the ratio as 6: 4. Five years ago their ages were in the ratio 5: 3. What are their present ages?
- a) 25 and 15 years
- b) 26 and 16 years
- c) 28 and 18 years
- d) 30 and 20 years
- Q42. Rs. 2250 is divided among three friends Ajay, Vijay, and Raj in such a way that $\frac{1}{6}$ th of Ajay's share, $\frac{1}{4}$ th of Vijay's share and $\frac{2}{5}$ th of Raj's share is equal. Find Ajay's share.
- a) Rs. 1080 b) Rs. 720
- c) Rs. 450 d) Rs. 1240
- Q43. A man can row upstream at 8 kmph and downstream at 13 kmph. The speed of the stream is_____
- a) 2.5 km/hr b) 4.2 km/hr
- c) 10.5 km/hr d) 11 km/hr

- Q44. Three pipes A, B and C can fill a tank in 6 hours. After working at it together for 2 hours, C is closed and A and B can fill the remaining part in 7 hours. The number of hours taken by C alone to fill the tank is:
- a) 10 h b) 12 h
- c) 14 h d) 16 h
- Q45. There are two trains that are running in the opposite direction. Each train has a length of 120 meters. They cross each other in 12 seconds, find the speed of the train.
- a) 42 km/hr b) 48 km/hr
- c) 36 km/hr d) 54 km/hr
- Q46. Find out the missing term in the series 80, 119, 166, 221,_____
- a) 284 b) 380
- c) 264 d) 324
- Q47. Find the number of digits that will be on the right side of the decimal point for the product of 0.5567 and 82.56.
- a) 6 b) 5
- c) 7 d) 3
- Q48. A man purchases 11 oranges for 10rs and Sells 10 oranges for 11rs. Find profit or loss%?
- a) 12% b) 13%
- c) 31% d) 21%

- Q49. A person A is two years older than another person B. The person B is twice as old as a third person C. The sum of the total ages of the three people is 27 years, then how old is B?
- a) 10 years
 - b) 11 years
 - c) 12 years
 - d) 13 years
- Q50. In a certain code, COMPUTER is written as RFUVQNPC. How is MEDICINE written in the same code?
- a) EOJDJEFM
 - b) EOJDEJFM
 - c) MFEJDJOE
 - d) MFEDJJOE
- Q51. The new findings on the virus caused panic among the scientists and management _____
- a) like
 - b) likely
 - c) alike
 - d) dislike
- Q52. Near the natural history museum, there is a bridge _____ the river Nile.
- a) above
 - b) over
 - c) off
 - d) towards

Q53. She is going to quit her job _____ they give her a pay rise.

- a) or
- b) until
- c) providing
- d) unless

Q54. Nuclear energy is _____ dangerous to be used widely.

- a) so
- b) such
- c) too
- d) that

Q55. I enjoy _____ Lennis,

- a) playing
- b) plays
- c) to play
- d) to playing

Q56. The man _____ you met is an anchorperson.

- a) who
- b) whose
- c) whom
- d) which

Q57. The woman _____ is standing by the table works in electronic media.

- a) who
- b) whose
- c) whom
- d) which

Q58. The house is large _____ is quite old-fashioned.

- a) and
- b) or
- c) which
- d) but

- Q70. Nakita and Vivin _____ to our house to play the treasure hunt with us.
- a) will have been coming
 - b) are coming
 - c) had been to come
 - d) come
- Q71. The sum of three numbers is 6. Thrice the third number when added to the first number gives 7. On adding three times first number to the sum of second and third number we get 12. The product of these numbers is _____
- a) 20
 - b) 3
 - c) $20/3$
 - d) $5/3$
- Q72. The equation of a line passing through the point of intersection of the lines $x+2y+8=0$ and $3x-y+4=0$ and having x and y intercept zero is _____
- a) $4x+5y=0$
 - b) $4x-5y=0$
 - c) $5x+4y=0$
 - d) $5x-4y=0$
- Q73. If sum of two unit vectors is a unit vector, then difference of these vectors is _____
- a) $\sqrt{3}$
 - b) 0
 - c) 1
 - d) 2

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Q74. If points P (4, 5, x), Q (3, y, 4) and R (5, 8, 0) are collinear, then the value of $x + y$ is _____

- a) -4 b) 3
- c) 5 d) 4

Q75. If $x^y * y^x = 16$, then dy/dx at $(2, 2)$ is _____

- a) -1 b) 0
- c) 1 d) 2

Q76. 10 is divided into two parts such that the sum of double of the first and square of the other is minimum, then the numbers are respectively _____

- a) 9,1 b) 8,2
- c) 6,4 d) 7,3

Q77. The rate of change of volume of a sphere with respect to its surface area, when the radius is 5 meters, is _____

- a) $\frac{2}{3}$
c) $\frac{5}{2}$
- b) 5
d) $\frac{1}{2}$

Q78. The variance of the following probability distribution is

X	0	1	2
P(x)	9/16	3/8	1/16

- a) $\frac{1}{8}$
c) $\frac{1}{4}$
- b) $\frac{5}{8}$
d) $\frac{3}{8}$

ENT-14

Q79. Rajesh has just bought a VCR from Maharashtra Electronics and the shop offers after sales service contract for Rs. 1000 for the next five years. Considering the experience of VCR users, the following distribution of maintenance expenses for the next five years is formed.

Expenses	0	500	1000	1500	2000	2500	3000
Probability	0.35	0.25	0.15	0.10	0.08	0.05	0.02

The expected value of maintenance cost is _____

- a) Rs. 800 b) Rs. 770
- c) Rs. 700 d) Rs. 900

Q80. Probability that a person will develop immunity after vaccination is 0.8. If 8 people are given the vaccine then probability that all develop immunity is _____

- a) $(0.2)^8$
c) 1
b) $(0.8)^8$
d) 0

Q81. The dual of a statement 'Mangoes are delicious but expensive' is

- a) Mangoes are delicious or Mangoes are expensive
- b) Mangoes are delicious or Mangoes are not expensive
- c) Mangoes are not delicious and Mangoes are not expensive
- d) Mangoes are delicious and Mangoes are expensive

Q82. "If two triangles are congruent, then their areas are equal" is the given statement, then the contrapositive of the inverse of the given statement is _____

(Where p: Two triangles are congruent, q: Their areas are equal)

- a) If two triangles are not congruent, then their areas are equal
- b) If two triangles are not congruent, then their areas are not equal
- c) If areas of two triangles are equal, then they are congruent
- d) If areas of two triangles are not equal, then they are congruent

Q83. The nth derivative of $(x-1)^n$ is _____

- a) $n!$
- b) $n(n-1)$
- c) $n(n+1)$
- d) 1

Q84. If $y = x \tan y$, then $dy/dx =$

- a) $(\tan x)/(x - y^2)$
- b) $y/(x - x^2 - y^2)$
- c) $(\tan x)/(x - x^2 - y^2)$
- d) $(\tan y)/(y-x)$

Q85. A bag contains 5 red marbles, 4 black marbles and 3 white marbles. Then the number of ways in which 4 marbles can be drawn so that at most 2 of them are red is _____

- a) 420
- b) 210
- c) 385
- d) 406

Q86. If $\tan A = 5/6$, $\tan B = 1/11$, then $A+B=$

a) $\pi/3$

b) $-\pi/3$

c) $-\pi/4$

d) $\pi/4$

Q87. The y-intercept of the line passing through A (6, 1) and perpendicular to the line $x-2y = 4$ is _____

a) 13

b) -2

c) 26

d) 5

Q88. For the set of 50 observations, the sum of their squares is 3050, their arithmetic mean is 6. Hence the standard deviation of these observation is _____

a) 5

b) 3

c) 4

d) 6

Q89. Two cards are drawn from a pack of well shuffled 52 playing cards one by one without replacement. Then the probability that both cards are queens is _____

a) $3/220$

b) $1/221$

c) $1/220$

d) $2/221$

Q90. The Cartesian equation of the curve given by $x = 6 \cos \theta$, $y = 6 \sin \theta$ is _____

a) $x^2 + y^2 = 6$

b) $x^2 + y^2 = 5$

c) $x^2 + y^2 = 16$

d) $x^2 + y^2 = 36$

- Q91. What does the range represent in measures of dispersion?
- a) Central Tendency
 - b) Variability
 - c) Spread
 - d) Skewness
- Q92. What mathematical notation is used to represent the constraints in an LPP?
- a) Quadratic equations
 - b) Inequalities
 - c) Exponential equations
 - d) Linear equations
- Q93. What is the objectives of a linear programming problem (LPP)?
- a) Classification
 - b) Prediction
 - c) Optimization
 - d) Interpolation
- Q94. What type of differential equation represents exponential growth or decay?
- a) second order
 - b) linear
 - c) non-linear
 - d) first order
- Q95. Which measure of dispersion is resistant to outliers?
- a) Variance
 - b) Standard Deviation
 - c) Range
 - d) Interquartile Range (IQR)

Q96. Which data structure organizes data in a hierarchical manner?

- a) Graph
- b) Tree
- c) Linked list
- d) HTTPS

Q97. What is the purpose of DNS in computer networks?

- a) Translation
- b) Coding
- c) Name Resolution
- d) none of these

Q98. Which protocol is used for sending and receiving email messages?

- a) SMTP
- b) IP
- c) UDP
- d) HTTPS

Q99. Which type of software is designed to perform a specific task, such as antivirus programs?

- a) Application
- b) Utility
- c) System
- d) none of these

Q100. Which data structure organizes elements in a linear sequence?

- a) TCP
- b) IP
- c) Array
- d) none of these

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ROUGH WORK