

Serial No. of Booklet :

**Code No. : 1288**

**B. C. A. (Second Semester) Examination, 2022-23**

AFFIX PRESCRIBED  
RUBBER STAMP

**Paper Fourth**

**NUMERICAL METHODS AND GRAPH THEORY**

**Course Code—BCA-204(T) (Major)**

In Figures (अंकों में) :

**Roll No.**

In Words (शब्दों में) :

Date : .....

**Time : 2 Hrs.**

**Signature of Invigilator**

**कक्ष निरीक्षक के हस्ताक्षर**

**Max. Marks : 75**

**Important Instructions :**

1. The candidate will write his/her Roll Number only at the places provided for, i. e., on the cover page and on the OMR answer sheet at the end and nowhere else.
2. Immediately on receipt of the question booklet, the candidate should check up the booklet and ensure that it contains all the pages and that no question is missing. If the candidate finds any discrepancy in the question booklet, he/she should report the invigilator within 10 minutes of the issue of this booklet and a fresh question booklet without any discrepancy is obtained.
3. No second question booklet shall be given to a candidate under any circumstances after 10 minutes. The candidate should be careful in handling the question booklet and in filling the OMR answer sheet given separately with this booklet.

**महत्त्वपूर्ण निर्देश :**

1. अभ्यर्थी अपने अनुक्रमांक केवल उन्हीं स्थानों पर लिखेंगे जो इसके लिए दिये गये हैं, अर्थात् प्रश्न पुस्तिका के मुख्य पृष्ठ तथा साय दिये गये ओ. एम. आर. उत्तर पत्र पर, तथा अन्यत्र कहीं नहीं लिखेंगे।
2. प्रश्न पुस्तिका मिलते ही अभ्यर्थी को जाँच करके सुनिश्चित कर लेना चाहिए कि पुस्तिका में पूरे पृष्ठ हैं और कोई प्रश्न छूटा तो नहीं है। यदि कोई विसंगति है तो प्रश्न पुस्तिका मिलने के 10 मिनट के भीतर ही कक्ष परिप्रेक्षक को सूचित करना चाहिए और बिना त्रुटि की दूसरी प्रश्न पुस्तिका प्राप्त कर लेना चाहिए।
3. किसी भी परिस्थिति में 10 मिनट बाद अभ्यर्थी को दूसरी प्रश्न पुस्तिका नहीं मिलेगी। अभ्यर्थी को प्रश्न पुस्तिका को उपयोग में लाने और ओ. एम. आर. उत्तर पत्र को भरने में सावधानी बरतनी चाहिए।

&

(Contd. on the last page / अन्य निर्देश अन्तिम पृ. पर)

1. Numerical integration using trapezoidal rule gives the best result for a single variable function which is .....

- (A) Logarithmic
- (B) Parabolic
- (C) Linear
- (D) Hyperbolic

2. A graph is a collection of .....

- (A) Rows and Columns
- (B) Vertices and edges
- (C) Equations
- (D) None of these

3. For which of the following combinations of the degrees of vertices would the connected graph be Eulerian ?

- (A) 1, 2, 3
- (B) 2, 3, 4
- (C) 2, 4, 5
- (D) 1, 3, 5

4. Gauss-Seidel method is also termed as a method of .....

- (A) Iterations
- (B) Eliminations
- (C) False positions
- (D) Successive displacement

5. Rate of convergence of the Newton-Raphson method is generally .....

- (A) Quadratic
- (B) Cubic
- (C) Linear
- (D) None of these

6. Three men and three women are candidates for 2 vacancies. A voter has to vote for 2 candidates. In how many ways can one cast his vote ?

- (A) 11
- (B) 15
- (C) 30
- (D) 36

7. How many predictor and corrector steps does the fourth-order Runge-Kutta method use ?

- (A) Two predictor and two corrector steps
- (B) Three predictor and one corrector steps
- (C) One predictor and three corrector steps
- (D) One predictor and two corrector steps

8. Which of the following is not an interpolation formula ?

- (A) Newton-Raphson
- (B) Newton-Gregory backward
- (C) Newton-Gregory forward
- (D) Lagrange's formula

9. If there is a closed trail in a graph which includes every edge of the graph then the graph is called :

- (A) Directed graph
- (B) Hamiltonian Graphs
- (C) Eulerian graph
- (D) None of these

10. Simple graph is .....

- (A) in which all the edges are simple
- (B) a graph that does not have more than one edge between any two vertices and no edge starts and ends at the same vertex.
- (C) Both of above
- (D) None of these

11. If in a graph multiple edges between the same set of vertices are allowed, it is called :

- (A) Hamiltonian Graph
- (B) Simple Graph
- (C) Euler Graph
- (D) Multi Graph

12. Find the number of triangles which can be formed by joining the angular points of a polygon of 8 sides as vertices.

- (A) 56
- (B) 24
- (C) 16
- (D) 8

13. There are 3 prizes to be distributed among 5 students. If no student gets more than 1 prize, then this can be done in .....

- (A) 60 ways
- (B) 30 ways
- (C) 10 ways
- (D) 80 ways

14. If the normal equations of a straight line  $y = ax + b$  are  $26 = 4a + 6b$  and  $34 = 6a + 4b$  then fit the above straight line.....

- (A)  $y = 5x - b$
- (B)  $y = 5x + b$
- (C)  $y = x + 5b$
- (D)  $y = x - 5b$

15. Binomial coefficient is .....

- (A) Coefficient of quadratic equation
- (B) Coefficient of linear equation
- (C) Coefficient of cubic equation
- (D) Coefficients of expansion of binomial theorem

16. Which interpolation formula is best suitable if the desired value is near the end of series ?

- (A) Newton Forward Interpolation formula
- (B) Newton Backward Interpolation formula
- (C) Both of above
- (D) None of these

17. The travelling salesman problem can be solved using .....

- (A) A spanning tree
- (B) A minimum spanning tree
- (C) DFS algorithm
- (D) All of the above

18. Bisection method and Secant method.....

- (A) Gives same results
- (B) Gives different results
- (C) The results can be same as well as different
- (D) None of these

19. LU decomposition method is used to.....

- (A) Matrix decomposition
- (B) Finding solution of linear equations
- (C) Both (A) and (B)
- (D) None of these

20. The coordinates (1, 1), (20, 400), (30, 800), (40, 1300) are for the curve  $y = a + bx$ . The value of b is :

- (A) 30.625
- (B) 32.625
- (C) 27.605
- (D) 42.561

21. In an iterative method, the amount of computation depends on the :

- (A) Number of variables
- (B) Degree of accuracy
- (C) Rounding of errors
- (D) Ease of using the operators

22. Which of the following is not the algorithm to find the minimum spanning tree of the given graph ?

- (A) Prim's algorithm
- (B) Kruskal's algorithm
- (C) Boruvka's algorithm
- (D) None of these

23. A graph with no edges is known as empty graph. It is also known as :

- (A) Trivial graph
- (B) Regular graph
- (C) Bipartite graph
- (D) None of these

24. Which of the following methods is employed for solving the system of linear equations ?

- (A) Runge-Kutta
- (B) Newton-Raphson
- (C) Gauss-Seidel
- (D) Simpson's rule

25. In Simpson's  $1/3$  rule, curve  $y = f(x)$  is considered to be a .....
- (A) Hyperbola
  - (B) Parabola
  - (C) Circle
  - (D) Straight line
26. Binary tree is .....
- (A) A tree with all leaves at same level
  - (B) A tree in which all nodes can have at most 2 children
  - (C) A tree in which all nodes must have exactly 2 children
  - (D) None of these
27. What is the number of edges present in a complete graph having  $n$  vertices ?
- (A)  $(n*(n + 1)) / 2$
  - (B)  $(n*(n - 1)) / 2$
  - (C)  $n$
  - (D) None of these
28. The Gauss-Jordan method reduces a original matrix into a/an .....
- (A) Identity matrix
  - (B) Null matrix
  - (C) Skew-Hermitian matrix
  - (D) Triangular matrix
29. What is the maximum number of edges in a bipartite graph having 10 vertices ?
- (A) 24
  - (B) 21
  - (C) 25
  - (D) 16
30. How many numbers of times will the digit 7 be written when listing the integers from 1 to 1000 ?
- (A) 271
  - (B) 300
  - (C) 252
  - (D) 304

31. MST stands for .....

- (A) Maximal spanning tree
- (B) Minimal shared tree
- (C) Minimal spanning tree
- (D) None of these

32. Trapezoidal rule is used for .....

- (A) Numerical differentiation
- (B) Numerical integration
- (C) Interpolation
- (D) None of these

33. Which of the following is true ?

- (A) A graph may contain no edges and many vertices
- (B) A graph may contain many edges and no vertices
- (C) A graph may contain no edges and no vertices
- (D) A graph may contain no vertices and many edges

34. Find the area of segment if the values of co-ordinates are given as 119.65 m, 45.76 m and 32.87 m. They are placed at a distance of 2 m each.

- (A) 20.43 sq.m
- (B) 2.34 sq.m
- (C) 20.34 sq.m
- (D) 87.34 sq.m

35. Degree of any vertex of a graph is .....

- (A) Number of edges incident with vertex
- (B) Number of vertex in graph
- (C) Number of vertices adjacent to that vertex
- (D) Number of edges in the graph

36. Linear system of equations is .....

- (A) Quadratic equation
- (B) Simultaneous equation
- (C) Both of above
- (D) None of these

37. How many steps does the fourth-order Runge-Kutta method use ?

(A) 2

(B) 5

(C) 4

(D) 3

38. The points where the Newton-Raphson method fails are called :

(A) Floating

(B) Continuous

(C) Non-stationary

(D) Stationary

39. In how many ways 2 students can be chosen from a class of 20 students ?

(A) 190

(B) 180

(C) 240

(D) 390

40. Which of the following shapes is generally preferred in case of application of Simpson's rule ?

(A) Square

(B) Triangle

(C) Trapezoid

(D) Rectangle

41. What is Null Graph ?

(A) A null graph has no nodes

(B) null graph has no edges

(C) null graph has no odd vertex

(D) null graph has no even vertex

42. Which method is the most appropriate method to fit a curve from the given data ?

(A) Sum of squares

(B) Square of squares

(C) Least square

(D) None of these



43. Find the number of rectangles and squares in an 8 by 8 chess board respectively.

- (A) 296, 204
- (B) 1092, 204
- (C) 204, 1092
- (D) 204, 1296

44. In a hockey championship, there are 153 matches played. Every 2 teams played one match with each other. The number of teams participating is.....

- (A) 16
- (B) 17
- (C) 18
- (D) 19

45. In a party every person shakes hands with every other person. If there are 105 handshakes, find the number of person in the party.

- (A) 15
- (B) 14
- (C) 21
- (D) 25

46. When 6 fair coins are tossed simultaneously, in how many ways of the outcomes will be atmost 3 of the coins turn up as heads ?

- (A) 24
- (B) 41
- (C) 22
- (D) 42

47. Spanning tree is .....

- (A) A binary tree
- (B) A rooted tree
- (C) A connected graph with  $n - 1$  edges
- (D) None of these

48. Trapezoidal formula is also known as .....

- (A) Simpson's rule
- (B) Co-ordinate method
- (C) Prismoidal method
- (D) Average end area method

49. Which of the following is an iterative method ?

- (A) Gauss-Seidel
- (B) Gauss-Jordan
- (C) Newton-Raphson
- (D) Gauss elimination

50. Which of the following can the Simpson's rule possess ?

- (A) Negatives
- (B) Accuracy
- (C) Positives
- (D) Zero error

51. In a colony, there are 55 members.

Every member posts a greeting card to all the members. How many greeting cards were posted by them ?

- (A) 990
- (B) 890
- (C) 2970
- (D) 1980

52. Fit a straight line for the given pairs

of  $(x, y)$  which are  $(0, 3), (1, 6), (2, 8), (3, 11), (4, 13), (5, 14)$ .

- (A)  $y = 2.26x$
- (B)  $y = 3.52 + 2.26x$
- (C)  $y = 3.52x$
- (D)  $y = 4 + 3x$

53. How many different 5-letter words be formed using the letters from the word APPLE ?

- (A) 24
- (B) 60
- (C) 120
- (D) 240

54. Which of these methods is named after the mathematician Carl Friedrich Gauss ?

- (A) Secant method
- (B) Runge-Kutta method
- (C) Newton-Raphson method
- (D) Gauss-Jordan method

55. How many diagonals can be drawn in a pentagon ?

- (A) 10
- (B) 5
- (C) 8
- (D) 7

56. Errors may occur in performing numerical computation on the computer due to which of the following reasons ?

- (A) Operator fatigue
- (B) Back substitution
- (C) Rounding errors
- (D) Power fluctuation

57. The graph in which, there is a closed trail which includes every edge of the graph is known as :

- (A) Hamiltonian Graph
- (B) Euler Graph
- (C) Planar Graph
- (D) Directed Graph

58. Factorial is.....

- (A) Number of objects
- (B) Possible number of arrangements of object
- (C) Square of number of objects
- (D) None of these

59. Which of the following statements for a simple graph is correct ?

- (A) Every path is a trail
- (B) Every trail is a path
- (C) Every trail is a path as well as every path is a trail
- (D) Path and trail have no relation

60. Use Bisection Method to find out the root of  $x - \sin x - 0.5 = 0$  between 1 and 2.

- (A) 1.497
- (B) 1.947
- (C) 1.479
- (D) 1.974

61. Which of the following indicates the assumption assumed in the trapezoidal formula ?

- (A) Mid-area is the mean of the starting area
- (B) Mid-area is the mean of the end area
- (C) Mid-area is the mean
- (D) Mid-area is not the mean of the end area

62. Which of the following ways can be used to represent a graph ?

- (A) Adjacency List and Adjacency Matrix
- (B) Incidence Matrix
- (C) Adjacency List, Adjacency Matrix as well as Incidence Matrix
- (D) No way to represent

63. Bisection method is used for finding .....

- (A) Approximate root of an equation
- (B) Solution of linear equations
- (C) Solution of trigonometric equation
- (D) None of these

64. How many Permutations of the letters of the word APPLE are there ?

- (A) 600
- (B) 120
- (C) 240
- (D) 60

65. The second-order Runge-Kutta method uses .....

- (A) backward order method
- (B) forward Euler method
- (C) midpoint rule
- (D) multipoint method

66. Roots of auxiliary equation of a matrix is called.....

- (A) Determinant
- (B) Inverse
- (C) Eigen values
- (D) Eigen vectors

67. In which of the following cases, Simpson's rule is adopted ?

- (A) When straights are perpendicular
- (B) When straights are parallel
- (C) When straights form curves
- (D) When straights form parabolic arcs

68. Which of these statements is correct ?

(A) When the order of accuracy is the same for two methods, the accuracy is also the same

(B) Runge-Kutta method interpolates at more than one point in a time interval

(C) Runge-Kutta method is not a multipoint method

(D) An  $n$ th order Runge-Kutta method is more accurate than the  $n$ th order multipoint method

69. There are 20 points in a plane, how many triangles can be formed by these points if 5 are colinear ?

(A) 1130

(B) 550

(C) 1129

(D) 1140

70. Which of these correctors does the second-order Runge-Kutta method use ?

(A) Backward Euler corrector

(B) Forward Euler corrector

(C) Trapezoidal corrector

(D) Midpoint rule corrector

71. Graph coloring is .....

(A) Making graph colorful

(B) Procedure of assignment of colors to each vertex of a graph  $G$  such that no adjacent vertices get same color.

(C) Both (A) and (B)

(D) None of these

72. Which of the following properties does a simple graph not hold ?

(A) Must be connected

(B) Must be unweighted

(C) Must have no loops or multiple edges

(D) Must have no multiple edges

73. The trapezoidal formula can be applied only if :

(A) It composes prism and wedges.

(B) It composes triangles and parallelograms.

(C) It composes prism and parallelograms.

(D) It composes triangles and wedges.

74. Which of the following is also known as the Newton-Raphson method ?
- (A) Diameter method
  - (B) Secant method
  - (C) Chord method
  - (D) Tangent method
75. Numerical techniques more commonly involve .....
- (A) Iterative method
  - (B) Direct method
  - (C) Reduction method
  - (D) None of these
76. What is the other name of Jacobi's method ?
- (A) Displacement method
  - (B) Simultaneous method
  - (C) Diagonal method
  - (D) Successive displacement method
77. Solve the equations using Gauss-Jordan method :
- $$x + y + z = 9$$
- $$2x - 3y + 4z = 13$$
- $$3x + 4y + 5z = 40$$
- (A)  $x = 1, y = 3, z = 2$
  - (B)  $x = 1, y = 3, z = 4$
  - (C)  $x = 1, y = 3, z = 5$
  - (D) None of these

78. Which of the methods is a direct method for solving simultaneous algebraic equations ?
- (A) Jacobi's method
  - (B) Cramer's rule
  - (C) Relaxation method
  - (D) Gauss-Seidel method
79. If  $MN$  exists, then  $(MN)^{-1}$  will be equal to which of the following ?
- (A)  $NM$
  - (B)  $N^{-1}M^{-1}$
  - (C)  $M^{-1}N^{-1}$
  - (D)  $MN$
80. In least-square method, we use .....
- (A) Auxiliary equations
  - (B) General equations
  - (C) Regression equations
  - (D) Normal equations
81. Which of the following is not a graph traversal algorithm ?
- (A) BFS
  - (B) Kruskal's Algorithm
  - (C) DFS
  - (D) All of the above

82. Fit the least square straight line with points (0, 0), (1, 1), (2, 8) and (3, 27).

(A)  $y = -4.2 + 8.8x$

(B)  $y = 8.8 - 4.2x$

(C)  $y = 4.2x + 8.8y$

(D)  $y = 4.2 + 8.8x$

83. Connected graph is .....

(A) in which all the vertices are connected directly or indirectly

(B) in which all the edges are connected

(C) Both (A) and (B)

(D) None of these

84. In how many ways 4 boys and 3 girls be seated in a row so that they are alternate ?

(A) 12

(B) 288

(C) 144

(D) 256

85. Find the area of the traverse using Simpson's rule if  $d = 12$  m and the values of ordinates are 2.25 m, 1.46 m, 3.23 m, 4.46 m.

(A) 116.88 sq.m

(B) 611.88 sq.m

(C) 169.54 sq.m

(D) 161.88 sq.m

86. The total number of ordinates present must be :

(A) Real numbers

(B) Odd

(C) Even

(D) Complex

87. Kruskal's algorithm is for .....

(A) traversing a graph

(B) traversing a binary tree

(C) finding MST

(D) None of these

88. At which point the iterations in the Newton-Raphson method are stopped ?
- (A) When the consecutive iterative values of  $x$  are equal
  - (B) When the consecutive iterative values of  $x$  differ by 2 decimal places
  - (C) When the consecutive iterative values of  $x$  differ by 3 decimal places
  - (D) When the consecutive iterative values of  $x$  are not equal
89. Number of iterations depends on the..... <https://www.suksn.com>
- (A) Approximations to be done
  - (B) Type of linear equations
  - (C) Number of unknowns
  - (D) Initial value taken to start the iteration
90. A weighted graph is .....
- (A) Same as simple graph
  - (B) Same as Euler graph
  - (C) Both (A) and (B)
  - (D) None of these

91. From 6 men and 4 women, a committee of 5 is to be formed. In how many ways can this be done if the committee must include at least 1 lady ?
- (A) 340
  - (B) 246
  - (C) 290
  - (D) 315
92. Which of these is a disadvantage of the Runge-Kutta method over the multipoint method ?
- (A) Computational cost
  - (B) Computational stability
  - (C) Accuracy
  - (D) Convergence
93. The number of MST of a graph with  $n$  vertices is .....
- (A)  $n$
  - (B)  $n - 1$
  - (C)  $n(n + 1)$
  - (D) None of these



94. The parameter E which we use for least square method is called as :

- (A) Residues
- (B) Error
- (C) Sum of residues
- (D) Sum of errors

95. In how many ways can 5 different toys be packed in 3 identical boxes such that no box is empty ?

- (A) 25
- (B) 20
- (C) 15
- (D) 200

96. Which of the following is not an iterative method ?

- (A) Secant
- (B) False position
- (C) Bisection
- (D) Gauss-Seidel

97. Pick the odd one out :

- (A) Gauss-Seidel
- (B) Trapezoidal rule
- (C) Gauss elimination
- (D) Gauss-Jordan

98. Find the number of ways of arranging the letters of the words DANGER, so that no vowel occupies odd place.

- (A) 36
- (B) 48
- (C) 96
- (D) 144

<https://www.suksn.com>  
Whatsapp @ 9300930012  
Send your old paper & get 10/-  
अपने पुराने पेपर्स भेजे और 10 रुपये पायें,  
Paytm or Google Pay से

99. The first two steps of the fourth order Runge-Kutta method use .....

- (A) Explicit Euler method
- (B) Forward Euler method
- (C) Backward Euler method
- (D) Euler methods

100. Matrix which does not have an inverse by solving it, is classified as which of the following ?

- (A) Singular matrix
- (B) Non-singular matrix
- (C) Linear matrix
- (D) Unidentified matrix

4. The candidate has to answer all 100 questions given in question booklet. Ovals are given against the alternative answer to each question. The candidate is expected to fill the oval against the particular question. Each question is of .75 mark.

5. There is no separate answer-book and the candidate has no mark answer on the OMR answer sheet given with this booklet separately. **Only this sheet will be evaluated.** In this answer sheet, the candidate is required :

(a) To blacken the alternative (A), (B), (C) or (D) which he/she considers to be correct answer to the question.

(b) To leave blanks all the ovals representing that question which he/she does not attempt.

6. The OMR answer sheet is generated by computer, therefore, in no case it should be mutilated or damaged or dog-eared as such sheet will not be evaluated by the computer.

7. As the maximum time allowed for the examination is 2:00 hours. the candidate is advised to spend initial 1:30 hours for the question paper and the remaining 30 minutes for carefully filling in the OMR answer sheet.

8. The candidate shall not bring any loose paper, whether printed, written or blank, mobile phone, calculator etc. inside the examination hall except the Admit Card.

9. End pages of question booklet shall be used for rough work.

**Note :** Please check the answer number of each question in the question booklet before filling ovals in the OMR answer sheet. Instruction for filling the OMR answer sheet is given on the back of this sheet. Read it carefully and do accordingly. Use **black/blue ball pen only** for filling the OMR answer sheet. Pencil or fountain pen must not be used for this purpose.

4. अभ्यर्थी को प्रश्न पुस्तिका में दिये गये सभी 100 प्रश्नों के उत्तर देने हैं। प्रत्येक प्रश्न के वैकल्पिक उत्तरों के सामने ओवेल (गोला) बना हुआ है। अभ्यर्थी द्वारा उपयुक्त ओवेल को पूर्णतया काला कर देना है, जिसको वह प्रश्न का सही उत्तर समझता है। प्रत्येक प्रश्न .75 अंक का है।

5. कोई अलग से उत्तर पुस्तिका नहीं है और अभ्यर्थी को प्रश्न पुस्तिका के साथ अलग दिए गए ओ. एम. आर. उत्तर पत्र पर ही प्रश्नों के उत्तर भरने हैं। केवल इस उत्तर पत्र का मूल्यांकन होगा। इस उत्तर पत्र में अभ्यर्थी को निम्न बातें भरनी हैं :

(अ) प्रश्न के वैकल्पिक उत्तर (A), (B), (C) या (D) जिसे वह प्रश्न का सही उत्तर समझता है, उससे सम्बन्धित ओवेल को काला करें।

(ब) जिस प्रश्न का उत्तर अभ्यर्थी को नहीं पता है उसके सामने बने सभी ओवेलों को खाली छोड़ दें।

6. ओ. एम. आर. उत्तर पत्र कम्प्यूटर जनित है। अतः किसी भी दशा में इसे विकृत, क्षतिग्रस्त या इसके कोने मुड़े हुए नहीं होने चाहिए।

7. चूंकि परीक्षा की अधिकतम निर्धारित अवधि 2:00 घण्टा है, इसलिए अभ्यर्थी को सलाह दी जाती है कि वह पहले 1 घण्टा 30 मिनट प्रश्नों को हल करने में तथा शेष 30 मिनट ओ. एम. आर. उत्तर पत्र भरने में लगाये।

8. अभ्यर्थी प्रवेश पत्र के अतिरिक्त कोई भी छपा हुआ, लिखा हुआ या कोरा फालतू कागज, मोबाइल फोन, कैलकुलेटर इत्यादि अपने साथ परीक्षा भवन के भीतर नहीं लायेगा।

9. रफ कार्य प्रश्न पुस्तिका के आखिरी पन्नों पर किया जा सकता है।

**टिप्पणी :** ओ. एम. आर. उत्तर पत्र में प्रश्नों की उत्तर संख्या भरने से पहले प्रश्न पुस्तिका में हल किये गये सभी प्रश्नों की उत्तर संख्याओं की अच्छी प्रकार जाँच कर लें। ओ. एम. आर. उत्तर पत्र भरने का निर्देश उसके पृष्ठ पर दिया गया है। इसे सावधानीपूर्वक पढ़ें और उसके अनुसार भरें। ओ. एम. आर. उत्तर पत्र को भरने के लिए केवल काले/नीले बॉल पेन का प्रयोग करें। पेंसिल या स्मॉली वाली पेन का प्रयोग नहीं करना है।