



**DEE-003-007206**

Seat No. \_\_\_\_\_

**M. C. A. (Sem. - II) (CBCS) Examination**

**May / June - 2015**

**MCA2006: Computer Oriented Numerical &  
Statistical Method**

**Faculty Code : 003**

**Subject Code : 007206**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

**Instruction:** Write answers of all the questions in main answer sheet.

1 Answer the following multiple choice questions. 15

(1) Which of the following Method is required initial value?

- (A) False Position Method
- (B) Gauss Jordan Method
- (C) Bisection Method
- (D) both (A) and (C)

(2) If Non-linear equation  $x(3)-2x-5=0$  interval(1.75 and 2.5) then what is value of  $X_1$  in false Position Method.

- (A) 2.0120
- (B) 2.1020
- (C) 2.0001
- (D) 2.0187

(3) A \_\_\_\_\_ Matrix is the total numbers of rows are equal to the total number of columns.

- (A) Diagonal
- (B) Symmetric
- (C) Trace
- (D) Square

- (4) In bisection method while taking the initial value for the two points which of the following condition must be satisfied?
- (A) Both must be positive  
 (B) Both must be negative  
 (C) Both must give the opposite sign  
 (D) None of these
- (5) If  $x+6=9$ , then  $3x+ 1 =$
- (A) 3 (B) 9  
 (C) 10 (D) 34
- (6) If the order of matrix A is  $m \times p$ . And the order of B is  $p \times n$ . Then the order of AB is ?
- (A)  $n \times p$  (B)  $m \times p$   
 (C)  $m \times n$  (D)  $n \times m$
- (7) In which of the following numerical methods total number of points must be odd?
- (A) Trapezoidal Rule (B) Simpson's 1/3 Rule  
 (C) Simpson 3/8 Rule (D) All of the above
- (8) Bisection method is also known as
- (A) Bolzano method (B) Interval Halving method  
 (C) Both of the above (D) None of the above
- (9) Types of Graphical representation.
- (A) 3 (B) 4  
 (C) 5 (D) 2

- (10) Another name of Newton-Raphson Method.
- (A) Tangent Method
  - (B) Newton Method
  - (C) Approximation Method
  - (D) None of this
- (11) How to find  $X_1$  Value in modify Euler method.
- (A)  $x_0 + x_0$                       (B)  $h + h$
  - (C)  $x + h$                               (D)  $x_0 + h$
- (12) Backward Operator called
- (A) Delta                              (B) Greek Symbol
  - (C) Nebla                              (D) All Of the above
- (13) Find out Geometric Mean given values (2, 2, 3, 4, 6, 5).
- (A) 3.005                              (B) 3.443
  - (C) 3.213                              (D) 3.116
- (14) Which Condition Change the Order of Row in Equation.
- (A) Pivot Element is Zero
  - (B) Divided by 1 is not possible
  - (C) Pivot element is One
  - (D) Equation is falls
- (15) In which of the following methods the resultant matrix will be a diagonal matrix?
- (A) Gauss Elimination (B) Jacobi Method
  - (C) Gauss Seidal                      (D) Gauss Jordan

2 Answer **any five** of the following:

15

- (1) Explain Newton Raphson's Method using graphical representation.
- (2) Define: Frequency Polygon and Histogram.
- (3) Draw a frequency curve from the given data

Clases	10- 20	20- 30	30- 40	40- 50	50- 70	70- 110	110- 115
No Of Std	16	24	39	25	20	20	12

- (4) Write a program for Newton's Forward table.
- (5) Write only formula for the veddle's rule and Simpson's 3/8 rule.
- (6) Define: square matrix and transpose of matrix.

3 Attempt **any three** of the following:

15

- (1) Solve the following system of equations using Jacobi method.

$$3x + 4y + 15z = 54.8$$

$$X + 12y + 3z = 39.66$$

$$10x + y - 2z = 7.74$$

- (2) Write a program for Bi-section Method.
- (3) Fine the median for the given data.

Class	60-64	65-69	70-74	75-79	80-84	85-89
No. Std	1	5	9	12	7	2

- (4) Solve the following data using guess forward difference method

X	40	50	60	70	80	90
Y	184	204	226	250	276	304

4 Attempt any two of the following:

15

- (1) Solve the given data using Invers matrix.

$$\begin{pmatrix} 1 & 2 & 3 \\ 2 & 1 & 5 \\ 5 & 6 & 0 \end{pmatrix}$$

- (2) Write down c program for Guess Jordan method.
- (3) Solve the following data using Trapezoidal & simpson -1 /3 rule.

X	0	1	2	3	4	5	6
Y	1	0	1	16	81	196	625

5 Attempt **any one** of the following:

10

- (1) Solve the following set of equations using R.K 4th Order Methods.

$$f(x, y) = xy \quad \text{Value } (x_1=1, y_1=5, h=0.1)$$

- (2) Write down c program for R.K. 2<sup>nd</sup> order method.
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