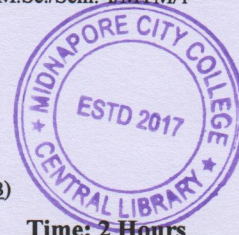


PG (NEW) CBCS
M.Sc. Semester-I Examination, 2019
MATHEMATICS
PAPER: MTM-104
(ADVANCED PROGRAMMING IN C AND MATLAB)

**Full Marks: 40****Time: 2 Hours****1. Answer any four questions of the following:****4 × 2 = 8**

- i. What are the data types in 'C'?
- ii. What is pointer? Explain with a suitable example.
- iii. What are the functions of malloc (), realloc (), and free ()?
- iv. Find $(29)_{10} - (23)_{10}$ using 2'S complement method.
- v. $(110001110011)_2$ - Find equivalent octal & hexadecimal.
- vi. Write a command in MATLAB to find the summation of two matrices.
- vii. Write a MATLAB command to display a graphics object.
- viii. 1 GB is equal to how many byte & bit?

2. Answer any four questions of the following:**4 × 4 = 16**

- i. What is call by value & call by reference? Discuss with a suitable example.
- ii. Write a 'C' program to find factorial of a number using recursion.
- iii. Write a 'C' program to sort a set of integers in ascending order using Bubble-sort method.
- iv. Write a 'C' program to check whether the number is Palindrome or not.
- v. Write a 'M'-script in MATLAB to multiply of two matrix of 3×3 .
- vi. Write a 'C' program to generate a Fibonacci series, i.e., 0, 1, 1, 2, 3, 5, 8, 13.....
- vii. Write a 'C' program to find standard deviation for an array of integers.
- viii. Write a 'C' program to check whether the number is Armstrong or not.

3. Answer any two questions of the following:**2 × 8 = 16**

- i. Write a 'C' program to find multiplication of two matrix.
- ii. Write a 'C' program to find reverse of a string with blank space using pointer.
- iii. Write a M-script file using MATLAB to generate a Sin-curve.
- iv. Write a 'C' program to implement Simpson's 1/3 rule for integration of a function.
