

ASSIGNMENT SET – I**Mathematics: Semester-I****M.Sc (CBCS)****Department of Mathematics****Mugberia Gangadhar Mahavidyalaya****PAPER - MTM-104****Paper:** Advanced programming in C & MAT LAB**MAT LAB**

1. Execute the following $\frac{e^{\sin(x^2)}}{\log_2(x^3e^{-y} + \log_{10}x^y)}$ When $x=2.1$ and $y= 3.007$.
2. What is right division ? Explain with example.
3. What is the cell array ? how will you write the name,address and age of three students in a cell array in MATLAB?
4. Write a script in MATLAB using help of if-elseif-else-end statement.
5. What is the output when you execute the following?

$$\gg A = [1: 2: 9; 2: 2: 10; 11: -2: 3; 3: 7]$$
6. How can you access a particular row or column of a matrix by a single statement in MATLAB, explain with example?
7. Describing 'for-end' statement in MATLAB. Write a script to assign different grades to students based their marks.
8. Describe 'if-else-if' statement in MATLAB, write a script to assign different grades to students based on their numbers.
9. Write a script in MATLAB using help of if-elseif-else-end statement.
10. How can you access first and last element together in an array by a single statement in MATLAB ? with proper example.
11. Write the command in MATLAB to delete a specific row from a matrix, with example.
12. What is the cell array ? how will you write the name,address and age of three students in a cell array in MATLAB?

13. How is a multidimensional array defined in terms of an array of pointers? What does each pointer represent? How elements can be accessed in this case?
14. Suppose an array A[-15 ... 64] is stored in a memory whose starting address is 459. Assume that the word size for each element is 2. Then obtain the following:
 - i) How many number of elements are there in the array A?
 - ii) If one word of the memory is equal to 2 bytes, then how much memory is required to store the entire array?
 - iii) What is the location for A[50]?
 - iv) What is the location of the 10th element?
 - v) Which element is located at 589?
15. Write a script in MATLAB to check whether a number is palindrome or not.
16. Write the short note on built-in-function.
17. Write short note on persistent variables and local variable
18. What is difference between **printf()** and **fprintf()**? Write a program which will save a text file to another file.
19. Write a script in MATLAB to create a matrix of desired size from an array input using 'scanf()' function.
20. Explain the **fprintf()** and **disp()** function.
21. Explain the functions **nargin** and **nargout** with proper example.
22. Write a script in MATLAB to check whether a number is palindrome or not.
23. Write a script in MATLAB to find the mean, median, variance, standard deviation for a set of discrete data.
24. Write the short note on Global variables and Persistent variables.

Advanced programming in C

25. How is a multidimensional array defined in terms of an array of pointers?
26. Write a program in C using pointers to compute the sum of all elements stored in an array.
27. Using function, write a program in C to find the roots of a quadratic equation.
28. Write a C program to read and display the details like roll number, name and total marks of student with the help of structure.
29. What is the difference between `i++` and `++i`?
30. Write a note on the preprocessor operators `#` and `##`
31. What is a self-referential structure? For what kinds of application are self-referential structures useful? Write a program in C to construct a linked list containing three components, where each component consists of two data items: a string and a pointer that references the next component within the list.
32. What is the output of the following program?


```
int main ()
{
    int m=5;
    if (m<3) printf(“ %d”, m+1) ;
    else if (m<5) printf(“%d”, m+2);
```

```
    else if(m<7) printf("%d", m+3);  
    else printf("%d", m+4);  
}
```

33. Which of the following is the correct syntax for initialization of one dimensional array?
(i) num[3]={0 0 0 }; (ii) num[3]={0, 0, 0 }; (iii) num[3]={0; 0; 0 }; (iv) num[3]=0
34. Write a program to read a matrix of size m×n.
35. Which of the following are the incorrect function declarations?
(i) int funct(int a, b); (ii) int funct(int a, int b); (iii) int funct(int ,int); (iv) int funct(int ,);
36. Write a **for** () statement to print first 1000 natural numbers.
37. Given a number, write a program using **while** loop to reverse the digits of the number. For example, the number 2358 should be written as 8532.
38. Using function, find the roots of a quadratic equation.

_____End_____