

M.Phil 1st Semester Examination, 2019

COMPUTER SCIENCE

PAPER – COS-115

Full Marks : 50

Time : 2 hours

The figures in the right hand margin indicate marks

(Computing Lab.)

UNIT—I

(MATLAB)

Answer any **one** questions : 10 × 1

1. Write a function that will received two input arguments : a character matrix that is a column vector of strings, and a string. It will loop to look for the string with in the character matrix. The function will return the row number in which the string is found if it is in this character matrix, or the inputs vector is not.

2. Create a data file to store blood doner information for a biomedical research company. For every doner, store their name blood type, Rh factor and blood pressure into. The blood type is A,B, AB or O. The Rh factor is + or -. The blood from contains two reading systolic and diastolic (Both double). Write a script to read from your file into a data structure and print the information from the file.
3. Print natural nos upto 60 using for loop using MATLAB code.
4. What are MATLAB command (1) to create the following matrix. Display it take inverse and transpose. Can you find the rank of the matrix ?

$$A = \begin{bmatrix} 7 & 8 & 9 \\ 4 & 5 & 6 \\ 1 & 2 & 3 \end{bmatrix}$$

5. Create Pascal Triangle with method Code

```
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
```

UNIT-II

(*Python programming*)

Answer any **one** questions (on lottery basis) : 10 × 1

1. Write a program in Python to calculate the average, minimum and maximum of numbers in a list.
2. Write a program in Python to reverse a given integer.
3. Write a program in Python to find the smallest and the largest divisors of an integer.

4. Write a program in Python to print an identity matrix of order n .
5. Write a program in Python to print an inverted half pyramid using the character '*'.
6. Write a program in Python to merge two lists and sort it.
7. Write a program in Python to remove the duplicate items from a list.
8. Write a program in Python to count the no. of vowels in a string.
9. Write a program in Python to count the occurrences of odd numbers in a list.
10. Write a program in Python to find the factorial of an integer.

UNIT-III

(*Letax*)

Answer any **one** questions : 10 × 1

1. Create your Biodata using Latex. Put also your image in the Biodata.
2. Prepare a journal paper on any topic using a template in Latex. The paper should have some section and subsection put relevant image (s) and Table (s) them.
3. Create a presentation on any topic using Becamer. Include list, table, graphics etc. In the presentation.

UNIT-IV

(*Paralel Computing*)

Answer any **one** questions : 10 × 1

1. Write a CUDA program to multiply two $n \times n$ matrix.

2. Write a CUDA program to perform two vector addition. The result is stored in a third vector.
3. Write a CUDA program that given an N -element vector, finds the largest element.
4. Write a CUDA program that given an N -element vector, finds the smallest element.

[*Internal Assessment*—10 Marks]
