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F.E Semester –II (Revised Course 2016-17)
EXAMINATION AUGUST 2021
Programming Languages

[Duration : Two Hours]

[Total Marks : 60]

Instructions:

- 1) Answer THREE FULL QUESTIONS with ONE QUESTION FROM EACH PART.
- 2) Draw neat diagram whenever necessary.
- 3) Assume suitable data if required.

PART-A

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|-----|---|---|
| Q.1 | a) List and explain the various components of a flowchart. | 4 |
| | b) Write an algorithm and draw a flowchart to accept 'n' numbers from the user and count the number of odd numbers and the number of even numbers in the entered set. | 6 |
| | c) Explain the element of C function with an example. | 6 |
| | d) Explain the features of block structured languages. | 4 |
| Q.2 | a) Explain the structure of a do-while loop with an example. | 6 |
| | b) Write a C program to create a user defined function cube that will print the cube of the numbers from 1 to 10. | 8 |
| | c) Devise an algorithm and draw a flowchart to find the sum of digits of a number. | 6 |
| Q.3 | a) Write a C program to design a calculator for basic arithmetic operations (+, -, *, /) using switch-case. | 8 |
| | b) Explain for loop with the help of an example. | 6 |
| | c) Write a C program to find the sum of squares of numbers between 1 to 100. | 6 |

PART-B

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| Q.4 | a) What is a 2D array? Explain with examples compile time and run time initialization of 2D array. | 6 |
| | b) Write a C program to delete an element from a 1D array. | 6 |
| | c) Write a C program to find the transpose of a matrix. | 8 |
| Q.5 | a) Write a C program using a structure to accept the details of n employees with fields such | 8 |

as employee id, name, qualification and salary.

Print the details of the employees having salary less than 10,000.

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|-----|---|----|
| b) | Write a C program to add two numbers using pointers. | 6 |
| c) | Define a structure giving an example. Can members of two different structures within the same program have same names? Justify your answer. | 6 |
| Q.6 | a) Explain the following string handling function with examples: | 10 |
| | i. strrev() | |
| | ii. strcmp() | |
| | iii. strlen() | |
| | iv. strstr() | |
| | v. strcat() | |
| | b) Write a C program to multiply two numbers using pointers. | 5 |
| | c) Explain the different modes of opening a file with examples. | 5 |

PART-C

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| Q.7 | a) Draw a flowchart to reverse an integer. | 5 |
| | b) What is top-down design? Enlist and explain all the factors that have to be taken into consideration before implementation of the above design. | 5 |
| | c) Distinguish between pass by value and pass by reference. | 5 |
| | d) Write a C program to find the sum of digits of an entered number. | 5 |
| Q.8 | a) Write a C program to find the sum of elements of a one-dimensional array. | 5 |
| | b) Explain following functions with syntax with respect to files:
(a)putc() (b)fprintf() (c)fscanf() (d)ftell() (e)fopen() | 10 |
| | c) Explain dynamic memory allocation. | 5 |