Code: 15A05101

B.Tech I Year I Semester (R15) Supplementary Examinations November/December 2019
COMPUTER PROGRAMMING
(Common to CE, EEE, CSE, ECE, ME, EIE and IT)

Time: 3 hours   Max. Marks: 70

PART – A
(Compulsory Question)
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1   Answer the following: (10 X 02 = 20 Marks)
(a)   Describe in one or two sentences about the phases in software development.
(b)   Draw a flow chart for finding the second maximum number in a set of three given integers.
(c)   If the base address of a two dimensional integer array A with 10 rows and 10 columns is 1100, find
        the address of the following elements. Size of integer is 2 bytes.
          (i) A[5][7].   (ii) A[0][0].   (iii) A[9][1].   (iv) A[7][7].
(d)   Illustrate the use of break statement with suitable code snippet.
(e)   Write a C function to interchange two values using pointers.
(f)   What is a type qualifier? What is its use? Give one example.
(g)   What is an enumerated data type? Give an example.
(h)   Give example for declaring and accessing bit fields.
(i)   What do you mean by formatted I/O? Give an example.
(j)   Write a C function to read two strings, compare them and print the result.

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2   (a)   Illustrate the working of bitwise operators in C.
    (b)   Write an algorithm and draw flow chart for computing the GCD of two given integers.
OR
3   Explain in detail about the data types in C.

UNIT – II

4   (a)   Write a C program for calculating the sum of first 'N' odd numbers using for loop.
    (b)   Write a C function that takes a single dimensional integer array as input and prints the largest
          number among the elements of the array. Access the elements of the array using pointer arithmetic.
OR
5   (a)   Write a C program for computing the sum of first 'n' terms of the following series using for loop.
          $1 + 1/x^2 + 1/x^4 + 1/x^6 + \ldots\ldots\ldots\ldots\ldots$
    (b)   Explain the syntax and use of switch statement with suitable example.

UNIT – III

6   (a)   Write a C function countEven(int*, int) which receives an integer array and its size, and returns the
          number of even numbers in the array.
    (b)   Write a brief note on storage classes in C.
OR
7   (a)   Write a C program to declare memory for an array of integers dynamically and initialize the array
          with -1.
    (b)   Illustrate the scope of variables in C with suitable example.

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UNIT – IV

8   (a)   Write a C program to determine mean and grade based on mean of the marks obtained by the students in three subjects. Grade is defined in below table.

Mean	Grade
90 <= x <= 100	A+
80 <= x < 90	A
70 <= x < 80	B
60 <= x < 70	C
x < 60	D

   (b)   Illustrate the use of typedef with suitable example.

OR

9   Provide an implementation of a function POINTshow(struct Rect, struct Point) that returns the position of the point with respect to the rectangle (i.e. Inside, outside or on). The rectangle corner points are stored in the structure Rect and the point coordinates are stored in a structure Point. Assume that the rectangle sides are parallel to the x and y axes.

UNIT – V

10   Write a C program to read a text file and print the following information. Provide the name of the file to read as command line argument:
   (i)Total number of characters.
   (ii) Total number of lines.
   (iii) Total number of vowels and consonants.
   (iv) Total number of words.

OR

11   Explain the following library functions with suitable examples:
     (i) fopen.   (ii) fread.   (iii) fseek.   (iv) fscanf.   (v) fprintf

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