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Total Number of Pages : 2

AR-19

B.TECH 1<sup>ST</sup> SEMESTER EXAMINATIONS (REGULAR), NOV/DEC 2019

BESBS1040 – Programming for Problem Solving

Time : 3 Hours

Maximum : 70 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) 10 × 1=10 Mark

Q.1. Answer ALL Questions.

- |   |  |             |
|---|--|-------------|
| a | Define variable in C.  | [CO1] [PO1] |
| b | List the features of C language.                                 | [CO1] [PO1] |
| c | Define an identifier. Give two examples for invalid identifiers. | [CO1] [PO1] |
| d | Write the difference between while and do-while loops.           | [CO2] [PO1] |
| e | Define an array.   | [CO2] [PO2] |
| f | Write the significance of strcpy().                              | [CO3] [PO1] |
| g | Write the purpose of free() function in C.                       | [CO4] [PO1] |
| h | Define recursion.  | [CO3] [PO2] |
| i | Define a pointer.  | [CO4] [PO1] |
| j | Write the purpose of extern storage class.                       | [CO3] [PO1] |

PART – B: (Short Answer Questions) 10x2=20 Marks

Q.2. Answer ALL questions

- |   |  |             |
|---|--|-------------|
| a | Compare break with continue.   | [CO2] [PO1] |
| b | List the differences between explicit and implicit typecasting.  | [CO1] [PO2] |
| c | Write the output for the following program<br>void main ( ) {<br>int a = 24, b = 13, c, d;<br>c = ++a + b;<br>d = a + --b;<br>printf ("a=%d", a);<br>printf ("b= %d", b);<br>printf ("c = %d", c);<br>printf ("d = %d", d);<br>} | [CO1] [PO3] |
| d | List the advantages that are associated with the use of functions in C language.   | [CO3] [PO1] |
| e | Explain the syntax of 'for loop' with an example.  | [CO3] [PO1] |
| f | List the advantages of using switch case.  | [CO2] [PO2] |
| g | Write the differences between calloc and malloc.   | [CO4] [PO2] |
| h | List the difference between call by value and call by address.   | [CO4] [PO1] |
| i | Write the differences between static and auto storage classes.   | [CO3] [PO3] |



- j Demonstrate the representation of an array of strings in memory. [CO3] [PO2]

PART – C: (Long Answer Questions) 4x10=40 Marks

Answer ALL questions

Q.3

- a Explain various operators used in c programming and exemplify the use of ternary operator. 7 [CO1] [PO1]  
b Write the silent features of C programming language. 3 [CO1] [PO1]

OR

- c The total distance travelled by a vehicle in t seconds is given by distance =  $ut + (at^2)/2$  Where u is the initial velocity (meters per second), a is the acceleration (meters per second<sup>2</sup>). Write a C program to calculate the distance travelled, given the values of u and a. 5 [CO1] [PO2]  
d Write a C program to swap two numbers with and without using a third variable. 5 [CO1] [PO3]

Q.4

- a Write a C program to check whether number is Prime or Not. 5 [CO2] [PO1]  
b Write C program to read two matrices and find the addition of the two. 5 [CO2] [PO1]

OR

- c Write C program to find the largest and smallest number among an array of integers. 5 [CO2] [PO1]  
d Write a C program to compute the trace of a given matrix. 5 [CO2] [PO1]

Q.5

- a Define String. List the various string manipulation functions available in C. Explain them with an example. 5 [CO3] [PO2]  
b Define a function. Explain different classification of user defined functions based on parameter passing and return type with examples 5 [CO3] [PO1]

OR

- c Write a C program to computer factorial of a given number using recursion. 5 [CO3] [PO1]  
d Write a C program to illustrate passing an array to a function 5 [CO3] [PO2]

Q.6

- a Write a program in C to find the sum and mean of all elements in an array using pointers. 5 [CO4] [PO2]  
b Define a structure. Explain how to declare, initialize and access the structure elements. 5 [CO4] [PO2]

OR

- c Define a pointer. Explain how the pointer variable declared and initialized. 5 [CO4] [PO3]  
d Write a C program to store and display details of students like marks in three subjects, name, roll number and mobile number. 5 [CO4] [PO3]