U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

February / March 2024 Semester End Main Examinations

Programme: B.E. **Semester: I / II**
Branch: Common to All Branches **Duration: 3 hrs.**
Course Code: 22CS1ESICP / 22CS2ESICP **Max Marks: 100**
Course: Introduction to C Programming

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

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UNIT - I

1 a) Write an algorithm and flowchart to find whether a number is positive, negative or zero. **06**

b) Check whether below identifier names are valid or not. Justify your answers. **06**

i. String1
ii. struct
iii. integer@1
iv. +sum
v. _name_stud
vi. 1var

c) Write a program to read principal_amount, Time, Rate of interest and find the Simple interest. **08**

UNIT - II

2 a) Explain break, continue statements with examples. **05**

b) Write a program to read n as no. of lines and print the pyramid in the below form: **07**
Eg: if n=5

```
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
```

c) Write a program to perform basic arithmetic operations based on the user choice (using switch statement). **08**

UNIT - III

3 a) Differentiate 1D and 2D arrays with examples. **05**

b) Write a program to read an array of integers in sorted order and perform binary search. **07**

c) Write a program to read the order of two matrices and perform matrix multiplication if they are compatible. **08**

UNIT - IV

4	a)	Explain function prototype, function definition and function call.	**05**
	b)	Write a program to perform factorial of a no. using functions.	**07**
	c)	Write a program to check if two strings are equal or not without using string built-in functions.	**08**

OR

5	a)	What is parameter passing? Explain different ways with suitable example.	**05**
	b)	Write a program to find addition of two integers to demonstrate function call by value and function call by reference.	**07**
	c)	Explain any two string handling functions with examples and write a program to find whether a string is palindrome or not.	**08**

UNIT - V

6	a)	Describe structure declaration and structure variable with an example.	**05**
	b)	Write a program to read and display in neat format the employee details such as Emp_name, Emp_job, Emp_salary using structures.	**07**
	c)	Demonstrate the concept of nested structures with an example program.	**08**

OR

7	a)	Describe pointer variable, reference and dereference operators.	**05**
	b)	Write a program to swap the contents of two integer variables using pointers.	**07**
	c)	Write the output of the following code	**08**

i.

```
#include <stdio.h>

int main()
{
   int *ptr;
   int x ;

   ptr = &x;
   *ptr = 0;

   printf(" x = %d", x);
   printf(" *ptr = %d", *ptr);

   *ptr += 5;
   printf(" x  = %d", x);
   printf(" *ptr = %d", *ptr);

   (*ptr)++;
   printf(" x = %d", x);
   printf(" *ptr = %d", *ptr);

   return 0;
}
```

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ii.

```
#include <stdio.h>

int main()
{
   int arri[] = {1, 2 ,3};
   int *ptri = arri;

   char arrc[] = {1, 2 ,3};
   char *ptrc = arrc;

   printf("sizeof arri[] = %d ", sizeof(arri));
   printf("sizeof ptri = %d ", sizeof(ptri));

   printf("sizeof arrc[] = %d ", sizeof(arrc));
   printf("sizeof ptrc = %d ", sizeof(ptrc));

   return 0;
}
```

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