C **Reg. No. :** | | | | | | | | | | | | |

Question Paper Code : U1207

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2024

First Semester

Civil Engineering

21UCS107- PROBLEM SOLVING AND C PROGRAMMING

(Common to ALL branches)

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

PART A - (5 x 1 = 5 Marks)

1. A BIT represents a _____. CO1-U

   (a)Decimal Digit (b) Octal Digit (c) Binary Digit (d) Hexadecimal Digit

2. What is the output of the following code segment? CO2-App

```
Void main ()
{
int n = 7;
printf("%d%d%d",n++,n,n--);
}
```

   (a) 6 6 7 (b) 6 7 7 (c) 7 7 8 (d) 8 8 7

3. Which statement is used to terminate the control from the loop? CO1-U

   (a) break (b) go to (c) exit (d) all the above

4. In an array x[10], the x represents the CO1-U

   (a) base address (b) base value (c) void pointers (d)None of the above

5. The number of bytes required for enumerated data type in memory is CO2-App

   (a)2 bytes (b) 4 bytes (c)1 byte (d)8 bytes

PART – B (5 x 3= 15 Marks)

6. Draw a flow chart to find the bigger of two numbers. CO2-App

7. Write a C program to find the total number of minutes of 12 hours. CO1-U

8.		State the difference between entry controlled and exit controlled loop with an example.	CO2-App	
9.		Write a C program to calculate factorial of a given number using recursion?	CO1-U	
10.		What are pointers? Why are they important?	CO1-U	

PART – C (5 x 16 = 80 Marks)

11.	(a)	Draw a block diagram to illustrate the basic organization of computer system and explain the functions of various units.	CO1-U	(16)
		Or		
	(b)	(i) Explain various phases involved in problem solving.	CO1-U	(8)
		(ii) With suitable example, explain about flowchart.	CO1-U	(8)
12.	(a)	i) The following dimensions are given: length l, breadth b and height h. There are some balls with a diameter of d. Write a C program to find the number of balls that can be put inside the box.	CO2 App	(8)
		ii) Write a C program to find the factorial of a given number.	CO2 App	(8)
		Or		
	(b)	Distance between two points(1,y1) and (2,y2) is governed by the formula D = (2 - 1) / 2 + (y2-y1)/2. Write a C program to compute D given the coordinates of the points.	CO2 App	(16)
13.	(a)	Discuss the various conditional branching statements used in C with its syntax and flow diagram.	CO1-U	(16)
		Or		
	(b)	Explain the importance of the following loop control statements with an example. 1) the break statement 2)the continue statement 3)the goto statement	CO1-U	(16)
14.	(a)	(i) Explain any four string handling functions with suitable example.	CO1-U	(8)
		(ii) Write a C program to concatenate any two given strings.	CO2-App	(8)
		Or		
	(b)	(i) Differentiate pass by value and pass by reference with suitable example.	CO1-U	(8)
		(ii) Write a function which is used to increment an integer using call by reference method.	CO2 App	(8)

15. (a) Write a C program for concatenation of two strings using pointers. CO2- App (16)

Or

(b) Write a structure to store the name, account number and balance for customers (more than 10) and store their information. Write a function to print the names of all the customer having balance less than Rs.200. CO2- App (16)