Enrolment No/Seat No.: _____

R.N.G.PATEL INSTITUTE OF TECHNOLOGY-RNGPIT

(An Autonomous College U/s UGC Act 1956)

B.Tech. SEMESTER-I, SEMESTER END EXAMINATION - WINTER 2024

Subject Code: 1CS101 **Date: 16-12-2024**

Subject Name: FUNDAMENTAL OF COMPUTER PROGRAMMING

Time: 11:00 AM to 01:30 PM **Total Marks: 70**

Instructions

1. It is **compulsory** for students to write **Enrolment No. /Seat No.** on the question paper.
2. Write answers of **Section A** and **Section B** in **separate answer books**.
3. Attempt all questions from both **Section A** and **Section B**.
4. Each section carries **35 marks**, with a total of **70 marks** for the examination.
5. The figures to the right of each question indicate full marks, make suitable assumptions with justification.
6. BL - Bloom's Taxonomy Levels (R-Remember, U-Understanding, A –Application, N –Analyze, E – Evaluate, C -Create), CO - Course Outcomes.

SECTION A

		Marks	BL	CO
Q.1	**Objective-Type Questions**	**[05]**		
(a)	What will be the output of the following C code?	**1**	**A**	**1**

```
#include <stdio.h>
int main()
{
   int x = 15;
   int y;
   y=x++;
   printf("%d, %d",x,y);
   return 0;
}
```

(i) 16, 16 **(ii)** 15, 15

(iii) 16, 15 **(iv)** Error

(b)	Operator % in C Language is called?	**1**	**R**	**1**

(i) Percentage Operator **(ii)** Quotient Operator

(iii) Modulus **(iv)** Division

(c) A recursive function in C is ___. **1 R 4**

(i) Call itself again and again **(ii)** Loop over a parameter

(iii) Return multiple values **(iv)** None of these

(d) What is the output of this C code? **1 A 5**

```
#include<stdio.h>
int main()
{
int **q,*p,i=8;
p=&i;
q=&p;
printf("%d %d\n", *p, **q);
return 0;
}
```

(i) 1001 1004 **(ii)** 8 8

(iii) 7 8 **(iv)** Error

(e) EOF is an integer type defined in stdio.h and has a value _____. **1 U 5**

(i) 1 **(ii)** 0

(iii) NULL **(iv)** -1

Q.2 Attempt Any Two **[10]**

(a) Write an algorithm to check whether given number is even or odd and also draw flowchart for same. **5 A 1**

(b) Explain the Basic structure of 'C' program with diagram. **5 U 1**

(c) Enlist types of operators in C and explain any four operators with an example. **5 U 1**

Q.3 Attempt Any Two **[10]**

(a) Enlist categories of function and explain any two categories with an example. **5 U 4**

(b) Define: Union. Give the comparison between structure and union. **5 N 4**

(c) Write a program to find factorial of a number using recursion. **5 A 4**

Q.4 Attempt Any Two **[10]**

(a) What is dynamic memory allocation? Explain usage of malloc() and calloc(). **5 U 5**

(b) Enlist various file management function in C and explain any four functions. **5 U 5**

(c) Write a function using pointers to swap the values stored in two locations in the memory. **5 R 5**

SECTION B

		Marks	BL	CO
Q.5	**Objective-Type Questions**	**[05]**		
(a)	Which of the following is used as a string termination character?	**1**	**N**	**2**
	(i) 0 **(ii)** \0			
	(iii) /0 **(iv)** None of these			
(b)	Array index start at	**1**	**N**	**3**
	(i) 1 **(ii)** User Defined			
	(iii) 0 **(iv)** None of these			
(c)	What is the highest index of int arr[5]?	**1**	**U**	**3**
	(i) 1 **(ii)** 2			
	(iii) 4 **(iv)** 5			
(d)	Which loop is guaranteed to execute at least one time?	**1**	**R**	**2**
	(i) while **(ii)** do while			
	(iii) for **(iv)** None of these			
(e)	Comment on an array of the void data type.	**1**	**A**	**2**
	(i) It can store any data-type **(ii)** It only stores element of similar data type to first element			
	(iii) It acquires the data type with the highest precision in it **(iv)** You cannot have an array of void data type			
Q.6	**Attempt Any Two**	**[10]**		
(a)	Explain the for loop with example.	**5**	**U**	**2**
(b)	Define break and continue statement with example.	**5**	**A**	**2**
(c)	Write a program to store 10 elements in array given by user and to find maximum out of those 10 elements.	**5**	**A**	**3**

Q.7	**Attempt Any Two**	**[10]**		
	(a) Explain entry controlled and exit controlled loop with proper syntax.	**5**	**U**	**2**
	(b) What is a string? Explain at least 4 built-in string functions with example.	**5**	**R**	**3**
	(c) Write a program to print the pattern shown below.	**5**	**A**	**2**

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

Q.8	**Attempt Any Two**	**[10]**		
	(a) Write the program for 2D array declaration, initialization and iteration.	**5**	**R**	**3**
	(b) Compare and contrast goto statement and switch statement with example.	**5**	**N**	**2**
	(c) Write a program to find sum of first N odd numbers. Ex.	**5**	**A**	**2**

1+3+5+7+……..+N

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