Seat No. 56029

ITM (SLS) BARODA UNIVERSITY, VADODARA

SOCSET- B. Tech – Semester – II (Regular & Remedial) Examination – Summer, 2023

Course Code : C2210C1 | **Date : 04-07-2023**

Course Name : Programming in C | **Day : Tuesday**

Time : 10:15 am to 1:15 pm | **Total Marks : 100**

Instructions:

1. **All questions are mandatory. There are no external options.**
2. **Make suitable assumptions, wherever necessary, and state them clearly.**
3. **Use of Non-Programmable Calculator is allowed/Not allowed.**
4. **Figures to the right indicate maximum marks.**

Q:1 **Attempt the following Questions.** **(20)**

1. The _____ statement allows for multi-way decision making based on the value of an expression.
   (A) if-else (B) switch (C) for (D) while
2. What will be the output of the following code?

```
#include<stdio.h>
int main() {
   int x = 10;
   if(x > 5) {
      int x = 5;
      printf("%d", x);
   }
   return 0;
}
```

   (A) 10 (B) 5 (C) Compilation error (D) 15
3. Which of the following is not a valid C variable name?
   (A) int sum; (B) float rate; (C) int student_count; (D) int $avg;
4. A declaration float rate; occupies _____of memory ?
   (A) 1 bytes (B) 4 bytes (C) 8 byte (D) 16 bytes
5. What will be the output of the following code?

```
#include<stdio.h>
int main()
{
char str[ ]={'I','T','M','B','U','\0'};
printf("%s", str);
return 0;
}
```

   (A) I (B) ITMBU (C) ITMBU\0 (D) Compilation error
6. What is the correct way of declaring a float pointer?
   (A) float ptr; (B) *float ptr; (C) float *ptr; (D) *float *ptr;
7. Which symbol is used to represent a decision or condition in a flowchart?
   (A) Rectangle (B) Diamond (C) Oval (D) Parallelogram
8. The _____ statement is used to terminate the execution of a loop and exit out of it.
   (A) continue (B) break (C) goto (D) return
9. _____ loop is executed at least once even the loop condition is false.
   (A) for loop (B) while loop (C) do while loop (D) None of the mentioned
10. Which of the following is required for a recursive function to terminate?
    (A) Base case (B) Recursive case (C) Looping construct (D) Function prototype
11. The index of the first element in an array is _____.
    (A) 0 (B) 1 (C) -1 (D) The index can be arbitrary

12. _____ is a ternary operator.
(A) ?? (B) :? (C) ?: (D) ::

13. An array in C is
(A) A collection of similar data elements (B) A collection of different data elements
(C) A data type that stores a single value (D) A function that performs calculations on data

14. Which header file should be included to work with strings in C?
(A) stdio.h (B) math.h (C) string.h (D) ctype.h

15. What is the maximum number of elements that can be stored in an array of size N?
(A) N (B) N-1 (C) N+1 (D) There is no maximum limit

16. The format string to accept a string is
(A)%c (B)%d (C)%f (D)%s

17. Which of following is not a valid assignment expression?
(A) y = 22 ; (B) s = x; (C) y % = 6; (D) z = 5 = 3;

18. A Pointer is _____.
(A) A keyword used to create variables.
(B) A variable that stores address of an instruction.
(C) A variable that stores address of other variable.
(D) None of the above.

19. The "==" operator in C is used for _____.
(A) Assignment (B) Addition (C) Subtraction (D) Comparison

20. What is the return type of a function that does not return a value?
(A) int (B) void (C) float (D) char

Answer any Four out of Six Questions. **(20)**

1. Explain any four string handling functions with an example.
2. Describe categories of User defined function.
3. Write a C program to find the largest number from three input numbers.
4. Compare entry control loop and exit control loop with example.
5. Write the difference between keywords and identifiers in C?
6. Explain for loop and Construct 'C' program to print the following pattern using loop statement.

```
*
**
***
****
```

Answer any Four out of Six Questions. **(20)**

1. List and explain different data types available in C.
2. Explain the concept of recursion with an example.
3. Write the difference between call by value and call by reference with an example of any user define functions in C.
4. What is a pointer? Explain how pointers are declared and initialized.
5. Define algorithm and explain different symbols used in flowchart.
6. Write a C program to read numbers 1 to 7 and print relatively day Sunday to Saturday using switch statement.

Answer any Four out of Six Questions. **(20)**

1. Write difference between break and continue statement.
2. Write a program to find sum of first N odd numbers.
Ex. 1+3+5+7+.....,+N
3. List any four header files in C with its usage.
4. Explain one dimension array declaration, initialization and iteration with example.
5. Explain different types of operators in C.
6. Define general form of 1) do while loop 2) Nested if 3) goto

Q:5 **Answer any Four out of Six Questions.** **(20)**

1. Write a C program to find 1+1/2!+1/3!+1/4!+.....+1/n!.
2. Explain actual and formal parameters(arguments). Write a C program with user defined functions to add, subtract, multiply and divide two numbers.
3. Define a structure "person" that would contain person name, date of joining and salary. Using this structure read information of 5 people and print the same on screen. Also display sum of salary of all 5 people.
4. Build a function to check number is prime or not. If number is prime then function return value is 1 otherwise return value is 0.
5. Explain various file management function in C.
6. What is union in C. How union is different from structure in C.

--- END OF PAPER ---