

END TERM EXAMINATION**SECOND SEMESTER [B.TECH] JULY 2021****Paper Code: ETCS-108****Subject: Introduction to Programming****Time: 3 Hours****Maximum Marks: 75****Note: Attempt any five questions including Q.No1 which is compulsory.
Internal Choice is indicated.**

Q1. Answer the following in brief:

(2.5 x10)

- (a) Differentiate between linker, loader and assembler?
- (b) Why C is known as mid-level language?
- (c) Explain Bitwise Operators with the help of an example?
- (d) Why is indentation important?
- (e) What is the difference between the 7, '7' and "7"?
- (f) What would this code print?
 inti;
 for(i = 0; i < 3; i = i + 1)
 printf("a\n");
 printf("b\n");
 printf("c\n");
- (g) Explain dangling pointer and NULL pointer with examples.
- (h) Explain enumerators?
- (i) Differentiate between sequential and random-access files?
- (j) Explain Array of pointer?

Q2 (a) Compare = (single equal) and == (double equal) operators. What are the two different kinds of division that the / operator can do? Under what circumstances does it perform each? **(5)**

(b) What would this code print? **(2.5)**

```
int x = 3;  
if(x)  
    printf("yes\n");  
else  
    printf("no\n");
```

(c) Differentiate between the following: **(5)**

- (i) Break Vs Continue statement.
- (ii) Formal Vs Actual Arguments.

Q3 (a) Differentiate between Automatic, Storage, Register and Extern Storage classes in C? Write a program to check given string is palindrome or not. **(7.5)**

(b) Differentiate between call by value and call by reference parameter passing Mechanism with the help of an example? **(5)**

Q4 (a) Differentiate between structure and union with example. **(5)**

(b) Write a program to count the number of vowels and words in the string "INTRODUCTION TO PROGRAMMING". **(5)**

(c) Under what conditions will this code print "water"? **(2.5)**

```
if(T < 32)  
    printf("ice\n");  
else if(T < 212)  
    printf("water\n");  
else  
    printf("steam\n");
```

- Q5 (a) If a four-digit number is input through the keyboard, write a program to obtain the sum of the first and last digit of this number. (5)
(b) Explain File Handling Operations in C. (5)
(c) Declare a structure for employee record. Also determine size of this structure. (2.5)
- Q6 (a) Explain different classifiers for formatted outputs with example. (5)
(b) Give function name, syntax and corresponding header file to achieve the following: - (5)
 i. To open a file in read mode.
 ii. To clear the input buffer.
 iii. To clear the output buffer.
 iv. To read the buffered strings.
 v. To read the character Un-buffered.
- (c) Differentiate between String and an Array? (2.5)
- Q7 (a) Write a program to print Fibonacci series up to n number using recursion. (5)
(b) Write a note on the following. (7.5)
 i. Datatypes
 ii. Preprocessor
 iii. Functions
- Q8 (a) Write a program to multiply two matrices. (5)
(b) Write a program to traverse the array? (5)
(c) Explain the use of stdlib.h and time.h files? (2.5)
- Q9 (a) Write a program that copies the file called "abc.txt" to another file called "new.txt" (5)
(b) Write down an algorithm to find the sum of diagonal element of two matrix. (5)
(c) Explain the difference between while and do while loop? (2.5)
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