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Question Paper Code : 40915

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2024.

First/Second Semester

Computer Science and Engineering

CS 3251 — PROGRAMMING IN C

(Common to : Computer Science and Engineering (Data Science)/ Electrical and Computer Engineering/Computer Science and Engineering (Artificial Intelligence and Machine Learning)/Computer Science and Engineering (Cyber Security)/Computer and Communication Engineering/Information Technology)

(Regulations 2021)

(Also Common to PTCS 3251 – Computer Science and Engineering for Regulations 2023)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write any two applications of C language.
2. Differentiate while and Do-While Loop statements.
3. If String 1="C Programming" and String 2="Language"; Write the built-in functions to
 - (a) Find the length of the String 1 ;
 - (b) Compare two strings. Whether they are equal.
4. What will happen if in a C program you assign a value to an array element whose subscript exceeds the size of array?
5. What is the Output of following program?

include <stdio.h>

void fun(int *ptr)

{

*ptr = 30;

```

}
int main()
{
    int y = 20;
    fun(&y);
    printf("%d", y);
    return 0 ;
}

```

6. List any two math built-in functions.
7. What are self referential structures?
8. Write the syntax for dynamic memory allocation.
9. Differentiate between Sequential and random access.
10. Write the functions of fscanf() and fprintf().

PART B — (5 × 16 = 80 marks)

11. (a) (i) Write a C program to check whether the person is eligible for voting using if/else. (8)
- (ii) Write a C program to print the grade of student using switch statement. (8)

Or

- (b) (i) Write a structure of a C program. (8)
- (ii) Explain the preprocessor directives in C programming. (8)
12. (a) Write a program using array to read and display the information about an employee and also calculate the payroll of an employee.

Or

- (b) (i) Write a C program to perform Matrix Multiplication. (8)
- (ii) Write a C programming to Sort the following numbers using selection sort : 45,6,89,3,4,56,10. (8)

13. (a) (i) Write a C program to generate fibonacci series using a recursive method. (8)
- (ii) Compare pass by value and pass by reference with an example. (8)

Or

- (b) (i) Write a C program to find if the string is palindrome or not. (8)
- (ii) Write a program in C to count the number of vowels and consonants in a string using a pointer. (8)

14. (a) A record contains information regarding In-Patient System such as pname, Address, PID and Admission_Date. Create a structure to hold the records of In-Patients. Write a C program :

(i) To insert a new patient into the patient system. (8)

(ii) To print all In-Patient details according to the Admission_Date. (8)

Or

(b) (i) Explain the various operations on Singly linked List. (8)

(ii) Write a short note on structures. (8)

15. (a) Write a C program to copy content of one file to another file. (16)

Or

(b) List the various types of file processing and explain any two. (16)