

MODEL QUESTION PAPER (REV-15)
SECOND SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY

PROGRAMMING IN C

(Maximum Marks : 100)

TIME : 3HRS

PART - A

Answer all Questions in one or two sentences. Each question carries **2 marks**.

I.

1. List the logical operators in C.
2. Write the syntax of switch statement.
3. List the data types in C.
4. What is wrong with this statement: `scanf ("%d%d", p, n) ;`
5. What is a pointer?

5x2=10

PART - B

Answer any **FIVE** of the following questions. Each question carries **6 marks**.

II.

1. Describe the *do ... while* instruction in C with the help of an example.
2. Compare the following code segments and explain your assessment:

Segment A

```
int a, b, c, d ;  
a = b = c = 10 ;
```

Segment B

```
int a = b = c = d = 10 ;
```

3. Explain the features of C Preprocessor.
4. Explain the use of *break* statement with the help of an example.
5. Write a function that returns the *average* of its 3 *integer* arguments.
6. Write a C program that finds the number of occurrences of a character in a string.
7. Declare an array of 10 *student* structures, each structure stores *student name, reg. number, marks of 3 subjects* and *total marks*. Write the code segment to update the total marks of all students.

5x6=30

PART - C

Answer **One** full question from each Unit. Each question carries 15 marks.

UNIT I

III.

1. Explain the various forms of *if* statement with examples

8

2. Write a C program to read a character 'c' and an integer 'n', and generate a pattern by displaying the character once in the first row, twice in the second row, thrice in the third row and so on, and n times in the last row. 7

OR

IV.

1. Explain the use of *nested for loop* with an example 8
2. Write a C program to find out all prime numbers between m and n , given m less than n . 7

UNIT II

V.

1. Explain recursion. Write a function $power(a,b)$, to calculate the value of a raised to b . 9
2. Compare the *static* and *automatic* storage classes. 6

OR

VI.

1. What is a macro? Describe macro expansion. How is a macro different from a function? 10
2. Write a macro CIRCLE, that prints the area and circumference of a circle. 5

UNIT III

VII .

1. Write a C program to add two $M \times N$ matrices 8
2. Explain how an array is *declared* and *initialized* with names of flowers. 7

OR

VIII.

1. Explain with an example how an integer array can be passed as parameter to a function. 7
2. Write a function in C that receives a *square matrix* as parameter and returns the sum of its elements on the principal diagonal. 8

UNIT IV

IX.

1. Compare strings with arrays. Explain different methods for inputting strings in a C program. 8

2. Write a function in C that receives a *string* as parameter and returns its length, without using any string library function 7

OR

X.

1. Define a student structure that stores the register number, name and date of birth of a student, where date_of_birth is another structure with fields day, month and year. 6
2. Create a structure to specify data of customers in a bank. The data to be stored are: Account number, Name, and Balance in account. Assume maximum of 200 customers in the bank. Write a program to print the Account number and name of each customer with balance below Rs. 1000. 9

15x4=60

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