

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE, APRIL - 2024**

**PROBLEM SOLVING AND PROGRAMMING**

[Maximum Marks:75]

[Time: 3 Hours]

**PART - A**

**I. Answer all the following questions in one word or one sentence. Each question carries 'one' marks.**

**(9 x 1 = 9 Marks)**

Module Outcome Cognitive level

1	..... is called pictorial representation of an algorithm.	M1.01	R
2	Which function s used in C to display output to the monitor?	M1.03	U
3	Arrange the following operators in the order of their precedence &&,*,<=,( )	M1.03	A
4	How will you find the size allocated for a particular data type in memory?	M2.02	U
5	..... statement is used to exit from a loop.	M2.07	U
6	A reusable block of code in C is called .....	M3.01	R
7	State whether true or false. Normally a function can return a single value at a time.	M3.02	U
8	Suppose an array is declared as a [3] = {19, 25, 27}. What is the value stored in location a[0]?	M4.01	A
9	What is a multidimensional array?	M4.01	R

**PART – B**

**II. Answer any eight questions from the following. Each question carries ‘Three’ marks.**

**( 8 x 3 = 24 Marks)**

Module Outcome Cognitive level

1	Draw a flow chart to calculate area and perimeter of a rectangle that reads length and breadth from user?	M1.01	U
2	Which are the logical operators used in C?	M1.03	R
3	Predict the output of the following code segment?  (a) void main () { int x =10,y; y=x++; printf(“y=%d”,y); }  (b) void main() { int x =10,y; y=++x; printf(“y=%d”,y); }	M1.03	A
4	What is a conditional operator? Explain with an example?	M2.03	R
5	Differentiate between continue and break statement with necessary example?	M2.07	U
6	Rewrite program code using while loop.  for(int i=1;i<=10;i++) { printf(“%d”,i); }	M2.04	U
7	Write any 3 built in functions used in C with their purpose?	M3.01	R
8	Explain two types of parameter passing techniques in C?	M3.02	U
9	Which program construct will you use to store the marks of a student in 5 subjects? Also find the highest mark obtained for the student?	M4.01	U
10	Create an array of size 3 by 2 and initialize with any values?	M4.03	A

**PART - C**

**Answer all the questions from the following. Each question carries ‘seven’ marks.**

**(6 x 7 = 42 Marks)**

Module Outcome Cognitive level

III.	Differentiate between identifiers, variables, constants and key words with appropriate example. <b>OR</b>	M1.03	U
IV.	Differentiate between unary operators and binary operators with appropriate example?	M1.03	U
V.	Explain general structure of C programming language with an example. <b>OR</b>	M1.01	R
VI.	Write a program to perform swapping of two numbers without using a temporary variable.	M1.04	A
VII.	Write a program to do a) read a number from user b) Check whether it is odd or even <b>OR</b>	M2.01	A
VIII.	What is switch statement used for? Explain with appropriate syntax and example.	M2.03	U
IX.	Explain the working of while and do-while loop with appropriate example. <b>OR</b>	M2.04	U
X.	Develop a C program to compute factorial of a number.	M2.04	U
XI.	a) Which are the elements involved in function definition? Give proper syntax? (4 marks) b) Write a function to find the sum of all digits in number entered. (3 marks) <b>OR</b>	M3.01	U
XII.	a) Differentiate between call by value and call by reference. (4 marks) b) Create a function to check whether a number entered is prime or not. (3 marks)	M3.03	A
XIII.	Write a C Program to sort the elements in an array in ascending order. <b>OR</b>	M4.02	A
XIV.	Write a C program to read a 3 x 3 array and find the sum of all diagonal elements?	M4.04	A

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