Graphic Era
HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

MID TERM ODD SEMESTER EXAMINATION-2025

Roll no.....

Name of the Program & Semester: B.Tech I SEM.
Name of the Course: Fundamentals of Computers & Introduction to Programming
Course Code: TCS 101
Time: 1.5 hours **Maximum Marks:** 50

Note:
(i) Answer **all the questions** by choosing *any one of the sub questions.*
(ii) Each question carries 10 marks
(iii) There is no internal choice in **Que. 5.**

Q.1	**(10 marks)**	
a)	Explain the memory hierarchy in a computer system. Why do we need both RAM and ROM? Illustrate with suitable examples.	CO1
	OR	
b)	Differentiate between application software and system software with examples. Define an Operating System (OS) and explain its main functions, including how it manages hardware, memory, and processes.	CO2
Q.2	**(10 marks)**	
a)	Explain the following terms: 1. Data Types 2. Identifiers 3. Constant 4. Precedence	CO1
	OR	
b)	What is an **algorithm**? How is it different from a **flowchart**? Write and algorithm and draw a flowchart to input a character and find whether it is number, alphabet or special symbol.	CO1
Q.3	**(10 marks)**	
a)	Draw a flowchart to input 2 integer numbers and print double of larger number and triple of smaller number.	CO3
	OR	
b)	Draw a flowchart to input an integer number and print its table in reverse order.	CO2

Sample Input:	**Sample Output:**
Input a number: 3	Table in reverse order: 30 27 24 21 18 15 12 9 6 3

Q.4	**(10 marks)**	
a)	Develop a 'C' code to input two different time in given format (Hour Minute Second) and add them as follow:	CO2, CO3, CO4

Sample Input:	**Sample Output:**
Input time1(Hr Min Sec): 11 59 59 Input time2(Hr Min Sec): 3 1 1	Final time after adding(Hr Min Sec): 15 1 0

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	OR	
b)	Develop a 'C' code to print following pattern (only 4 rows): A C E G I K M O Q S	CO1
Q.5	**(20 marks)**	
a)	Predict the output:	CO2, CO3. CO4

1.
```
#include <stdio.h>
int main()
{
   int a = 7, b = 2;
   float c = a / b;
   printf("%.2f\n", c);
   return 0;
}
```

2.
```
#include <stdio.h>
int main()
{
   int a = (1, 2, 3, 4, 5);
   printf("%d\n", a);
   return 0;
}
```

3.
```
#include <stdio.h>
int main()
{
  unsigned int a = 5, b = 9;
   printf("%u\n", (a & b) | (a ^ b));
   return 0;
}
```

4.
```
#include<stdio.h>
int main()
{
      int x = 4, y, z;
      y = --x;
      z = x--;
      printf("%d %d %d", x,  y, z++);
      return 0;
}
```

5.
```
#include<stdio.h>
int main()
   {
      int a;
      char c = '9';
      a = c - 9;
      printf("%d   %c",a, a);
      return 0;
   }
```