Tribhuwan University
Institute of Science and Technology
Himalaya College of Engineering

Bachelor Level / first-semester / Science   Full marks: 30
Computer Science and Information Technology (CSC110)   Pass marks: 12
(C Programming)   Time: 1.5hours

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

Attempt any one questions: [1x1=10]

1. What is algorithm and flowchart? Explain. Write algorithm and flowchart to check if three points (x1, y1), (x2, y2) and (x3, y3) fall on one straight line.
2. a) What is operator? Explain different types of operator used in C-Programming. Write a program to find leap year using nested if else statement.

Attempt any five questions: [5X4=20]

3. Differentiate between while and do while loop with example.
4. Find the error in the given program and explain it. Write the correct Program and output of the following program

   ```
   include <stdio.h>
   Void main(){
           Int i=1,j=1;
           While(1){
                   If(i>5)
                   Break;
                   Else j+=1;
                   Print("%d\n",j);
                   I=i+j;
           }}
   ```

5. Explain for loop. Write a program to add upto nth terms of the following series.
$$\frac{1}{1!} + \frac{2}{2!} + \frac{3}{3!} + \frac{4}{4!} + \frac{5}{5!} + \cdots$$

6. Explain the need of break and continue statement. Write a program to find LCM of given number.
7. Explain formatted and unformatted input out function used in C programming. Write a general format specification of printing different data types and briefly discuss about each part.

   Or

   Find the value of "a" in each of the following statements:
   int i=3 , j=4 ,k=8
   float a=4.5 ,b=6.5,c=3.5
   (a) a = b- i/k +c/k
   (b) a = (b-k)/j + (j + c)/k
   (c) a = c-((i + j)/(k + i))*b
   (d) a = c – i + j / k+ i * b
   (e) a = c + j % 2 +b

8. Difference between if and switch statement. A library charges a fine for every book returned late. For first 5 days the fine is 50 paisa, for 6-10 days fine is one rupee and above 10 days fine is 5 rupees. If you return the book after 30 days your membership will be cancelled. Write a program to accept the number of days the member is late to return the book and display the fine or the appropriate message.