

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)**ORGANISATION OF ISLAMIC COOPERATION (OIC)****Department of Computer Science and Engineering (CSE)****MID SEMESTER EXAMINATION****WINTER SEMESTER, 2018-2019****DURATION: 1 Hour 30 Minutes****FULL MARKS: 75****CSE 4175: Computer Programming****Programmable calculators are not allowed. Do not write anything on the question paper.**There are **4 (four)** questions. Answer any **3 (three)** of them.

Figures in the right margin indicate marks.

1. a) What is typecasting? Why is typecasting required? Explain with proper example. 2+5
- b) Write a program, which will take 10000 integers as input and print the average of those integers. 10
- c) Write down the output for the following code: 8

```
#include<stdio.h>
int z=5;
int main(void)
{
    int x=998785, y=2;
    printf("%d\n", x*y);
    x=x*y;
    printf("%d\n", ++x);
    printf("%d\n", x++);
    printf("%d\n", --y);
    for( ; y<2;++y) z*=y;
    printf("%d\n", y);
    printf("%d\n", x*y);
    x*=100;
    printf("%d\n", x/y);
    printf("%d\n", z);
    return 0;
}
```

2. a) What are ASCII Values and ASCII Characters? Write a program to print the ASCII values of characters starting from 'A' up to 'Z' and 'a' up to 'z'. 2+8
- b) Write a program that will take an integer as input and check whether it is an Armstrong number or not. 15
3. a) Explain the topics below: 2+4+2
 - i. Block of code
 - ii. Local & Global Scope
 - iii. Function Prototype
- b) 1 foot = 30.48 centimeters. Write a program that converts centimeters to foot. Write a function named **c_to_f** to perform the conversion. Call **c_to_f** from the main function with the number of centimeters as argument. Let **c_to_f** return the value of foot to the main function. 7

- c) Write a program, which will take three sides of a triangle as input and print whether the triangle is valid or invalid. Hints: Any side of a triangle cannot have value zero or less than that and any two side should be greater than the third one for a triangle to valid.

10

Sample Input	Sample Output
0 -5 7	Invalid
3 4 5	Valid
10 2 110	Invalid

4. a) Write down a program which will take an integer as input and check if it is prime or not.
b) Using nested for loop print the following shape (blank positions represent spaces):

15

10

```
  5
 45
345
2345
12345
```