ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
10 March 2015 (Afternoon)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
Department of Computer Science and Engineering (CSE)
MESTER EXAMINATION
WINTER SEMESTER, 2014-2015
TION: 1 Hour 30 Minutes
CSE 4101: Computer Fundamentals and Programming
FULL MARKS: 100
ammable calculators are not allowed. Do not write anything on the question paper.
There are **4 (four)** questions. Answer **3 (three)** of them including question # 1.
Figures in the right margin indicate marks.

What is an identifier? Why the programs are efficient and fast when these are written in C? 6

Write down the rules of Precedence and Associativity. Show the relative precedence of the relational and logical operators. 7

What will be output when you execute the Sample C code shown in Figure 1? 10

```c
#include<stdio.h>
int main(){
    int a=5,b=10;
    if(a<++a || b<b++)
        printf("%d  %d\n",a,b);
    else
        printf("Shakib Al Hasan\n");
        printf("%d  %d\n",a,b);
    int x=1,y=2;
    if(--x && --y)
        printf("x=%d  y=%d\n",x,y);
    else
        printf("%d %d\n",x,y);

    return 0;
}
```

Figure 1: Code for question 1(c)

A university has the following rules for a student to qualify for a degree with A as the main subject and **B** as the subsidiary subject: 10.33

  i.   He should get **55 percent** or more in A and **45 percent** or more in **B**.
  ii. If he gets less than **55 percent** in A, he should get **55 percent** or more in **B**. However, he should get at least **45 percent** in A.
  iii. If he gets less than **45 percent** in B and **65 percent** or more in A, he is allowed to **reappear** in an examination in **B** to qualify.
  iv. In all other cases he is declared to have **failed**.

Write a program to receive marks in A and B and Output whether the student has **passed**, failed or is allowed to **reappear in B**.

What do you understand by the terms information and operating system? How does the computer accept input from keyboard? 4+

b) State some tips of avoiding repetitive stress injuries.

c) Using a schematic diagram, state how an image is scanned by a scanner.

3. a) State the names of various types of output devices. It is known that any sound signal first converted into digital numbers and stored it in memory. State the concept of creating sound by a speaker when this sound is played.

b) In color monitors, each pixel is made of three dots arranged in triangle. State the concept of one pixel of color dot display. Explain the idea of dot pitch.

c) When evaluating a printer, you have to consider some criteria. Explain those.

4. a) What are the usages of binary number and hexadecimal number? Show the symbol of XOR gate and state the truth table of the gate. Write short note on Unicode.

b) Describe the machine cycle of an arithmetic and logic unit.

c) i) Using 2's complement, subtract 10 from -20.

ii) Using an example explain the concept of representing number using mantissa and exponent.