

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)

Department of Computer Science and Engineering (CSE)

WINTER SEMESTER EXAMINATION

TIME: 1 Hour 30 Minutes

WINTER SEMESTER, 2013-2014

FULL MARKS: 100

CSE 4101: Computer Fundamentals and Programming

Programmable calculators are not allowed. Do not write anything on the question paper.
 There are 4 (Four) questions. Answer 3 (Three) of them (NB: You must answer Question no. 1).
 Figures in the right margin indicate marks.

- Q) 'C University' admits 50 new Students at CSE Department each year. Students are given a yearly stipend as funding based on their merit. There are two funding schemes. The recipients of the "Turing" scholarship get \$5000 per year. The recipients of the "General" scholarship get \$2000 per year. Every student either receives a "Turing" or a "General" scholarship. Each year the University must calculate the total amount of money given as scholarship. Being an expert programmer yourself, you have been given the task to write a program that would do this particular task. Your program will take the number of students that would receive the "Turing" scholarship as input. Then it would print out the total amount of money in dollars that the university would have to give as scholarship to the students. It would also print the individual amount of money spent for each particular funding scheme. 10.33
- Sample Execution of your Program:

```
Enter the number of students that receive the Turing Scholarship:
12
Total amount given to Turing scholarship holders: 60000 dollars
Total amount given to General scholarship holders: 76000 dollars
Total amount given as scholarship: 136000 dollars
```

Figure 1: Code listing 1

- Q) All those years which are perfectly divisible by 4 are leap years except for century years (years ending with 00) which is a leap year only if it is perfectly divisible by 400. For example: 2012, 2004, 1968 etc are leap year but, 1971, 2006 etc are not leap year. Similarly, 1200, 1600, 2000, 2400 are leap years but, 1700, 1800, 1900 etc are not. 11

Write a program that asks the user to enter a year and the program checks whether that year is a leap year or not.

Find the output of the following code: 7

```
#include<stdio.h>
int main(){
char c='0';
if(c!=0) printf("wow");
else printf("not wow");
return 0;
}
```

Figure 2: Code listing 2

What is a token? How many different kinds of token are there? Name them. 5

2.
 - a) Define computer. It is obvious that computer can be used in all sectors of life. Discuss on the usages of computer at home.
 - b) What do you understand by software? "Software brings the machine to life", explain it.
 - c) How inputs are received from keyboard?
 - d) What is input ergonomics?
3.
 - a) Explain how data are displayed on a color monitor.
 - b) "Cache memory is improving computer's performance". Briefly state the functions of different type of cache memories.
 - c) How can you compare different kinds of printers?
 - d) Write short notes on SCSI.
4.
 - a) When a diskette is formatted with the FAT file system, four areas are created on the disk. Briefly explain those.
 - b) How do 0's and 1's are identified in CD-ROM? Explain the reading and writing mechanisms of DVDs.
 - c) Define average access time and data transfer rate. In what ways you can improve disk performance?
 - d) How does the operating system communicate with other operating system?