

**KABARAK**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**2009/2010 ACADEMIC YEAR**

**FOR THE DEGREE OF BACHELOR OF BUSINESS MANAGEMENT  
& INFORMATION TECHNOLOGY, BACHELOR OF  
ENVIRONMENTAL SCIENCE AND TELECOMMUNICATIONS**

**COURSE CODE: BMIT 226**

**COURSE TITLE: COMPUTER PROGRAMMING**

**STREAM: Y2S2**

**DAY: FRIDAY**

**TIME: 9.00 – 12.00 P.M.**

**DATE: 06/08/2010**

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**INSTRUCTIONS:**

- Answer question **ONE** and any other **THREE**

**PLEASE TURNOVER**

## QUESTION 1 (COMPULSORY) (40 marks)

- a) With examples explain the difference between a procedural programming language and object-oriented programming language.
- b) Write the general syntax for a C program.
- c) What is an algorithm? Why do you think is it important? (3mks)
- d) Write a program to display n odd numbers between 0 and 20? (5mks)
- e) Briefly explain the variable naming conventions? (5mks)
- f) What is the output of the following statements? (3mks)

(i) 

```
main()
{
    int a=3, b=6;
    printf(a=%d\n",a++);
    printf(b=%d\n",++b);
}
```

(ii) 

```
main()
{
    int m=7, b=9;
    printf(m=%d\n",--m);
    printf(n=%d\n",n--);
}
```

g) In retail sales, management needs to know the average inventory figure and the turnover of merchandise. Write a program in C to enable the user read the values for the beginning inventory, the ending inventory, the cost of goods sold and also display average inventory and turnover ratio. (8 mks)

The formulas for the calculations are:

$$\text{Average inventory} = \frac{(\text{Beginning inventory} + \text{Ending inventory})}{2}$$

$$\text{Turnover} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

Note: The average inventory is expressed in dollars; the turnover is the number of times the inventory turns over.

- h) What is the difference between the while and do---while looping statements?  
Use an appropriate syntax to explain. (5mks)
- i) Write a simple program to compute the sum and average of two numbers. (4mks)

## QUESTION 2 (20MARKS)

- a) Assume you wanted to write a program to compute an area of a circle. Write an algorithm that can be used to execute it. (5mks)
- b) Draw a Data Flow Diagram to support your answer in (a) above. (6mks)
- c) Write a program to compute the area of a circle? (4mks)
- d) Explain two ways in which we can assign values to declared variables. Give appropriate examples. (5mks)

## QUESTION 3 (20 MARKS)

- a) With the help of the appropriate syntax or flow chart describe the following decision making a branching statements:
  - (i) if statement (2mks)
  - (ii) for statement (3mks)
- b) Describe any three types of data type indicating their appropriate identifiers and place holders? (6mks)
- c) Write assume every employee gets 20% house allowance. Also, those earning at least 10,000 pay some tax at the rate of 10%. Write code to input salary and output the net salary. (6mks)  
**NB: Net salary=salary+house allowance-tax**
- d) Distinguish between the putchar() and getchar() input/output functions. (3mks)

## QUESTION 4 (20 MARKS)

- a) Explain the meaning of an array? (2mks)
- b) Explain any three types of errors available in programming? (6mks)
- c) Write a program to display the student mark-sheet with the following information student name, register number, mark1, mark2, mark3, mark4, total, average. (6mks)
- d) With examples explain how the following types of operators are used:
  - i. Logical operators (2mks)
  - ii. Relational operators (2mks)
  - iii. Special operator (2mks)

## QUESTION 5 (20 MARKS)

- a) What is a symbolic constant? Give an example
- b) Explain three principles of object oriented programming. (3mks)
- c) Consider:

```
main ()
{
    int x;
    for(x=0;x<=3;)
    {
        x=x+1;
        x++;
        printf("%d\n",x);
    }
    printf("\n");
}
```

Required:-

- i) Write down the output of the code.
- ii) Explain the use of X++
- iii) Write the equivalent code using **While** loop instead of **For** loop. (3mks)
- iv) Write the equivalent code using **Do....While** loop instead of **For** loop. (3mks)
- d) Using either an appropriate data flow diagram or syntax explain how the switch is used in C programming? (4mks)