

KABARAK



UNIVERSITY

UNIVERSITY EXAMINATIONS

2010/2011 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: THURSDAY

TIME: 9.00 – 12.00 P.M.

DATE: 08/12/2010

INSTRUCTIONS:

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

PLEASE TURNOVER

QUESTION 1 (COMPULSORY) (40 marks)

- a) Briefly explain the meaning of a procedural language and further highlight the its benefits. **(6 mks)**
- b) Explain how the following statements are used in C language. **(2 mks)**
- (i) `#include<stdio.h>`
 - (ii) `#define`
 - (iii) `scanf()`
 - (iv) `'\n'` and `'\t'`
- c) Discuss the application of the user defined data types in C language. **(5 mks)**
- d) Write a program to display the equation of a line in the form
 $ax + by = c$
for $a=5$, $b=8$ and $c=18$. **(5 mks)**
- e) Highlight the rules for creating and naming identifiers? **(5 mks)**
- f) Find errors, if any in the following program: **(3 mks)**
- (i)

```
#include (stdio.h)
void main(void)
{
    printf("Hello C");
}
```
 - (ii)

```
Include <math.h>
main{ }
(
    FLOAT X;
    X = 2.5;
    Y = exp(x);
    Printf(x,y);
)
```
- g) Using appropriate syntax distinguish between `putchar()` and `getchar()` functions. **(4 mks)**
- h) Fill in the blanks with appropriate words in each of the following statements. **(4 mks)**
- (i) Every program statement in a C program must end with a _____.
 - (ii) The _____ Function is used to display the output on the screen.
 - (iii) The _____ header file contains mathematical functions.
 - (iv) The escape sequence character _____ causes the cursor to move to the next line on the screen.

QUESTION 2 (20MARKS)

- a) Write a program that can be used to compare the greatest value among three values x,y and z, then display the result. **(6 mks)**
- b) Explain two ways in which we can assign values to declare variables. Give appropriate examples. **(4mks)**
- c) The names of five students begin with the following initials, D, K, E, P, J. Using array, declare an array-name student_name and assign the above initials to the array. Show how the values will be allocated in the computer memory. **(5 mks)**
- d) Distinguish between While and Do..While using syntax. **(5 mks)**

QUESTION 3 (20 MARKS)

- a) With the help of the appropriate syntax or flow chart describe the following decision making a branching statements:
 - (i) nested if...else statement **(5 mks)**
 - (ii) for statement **(3 mks)**
- b) Describe types of data type indicating their appropriate identifiers and place holders? **(5 mks)**
- c) A customer in KPLC is charged an amount in accordance with the number of units consumed in a given month. KPLC uses the following criteria on arriving at the amount

No of units consumed	amount
At least 0 up to 200	$(\text{units} * 1.5) + 150$
Above 201 but less than 400	$(\text{units} * 1.8) + 250$
Above 401 but less than 600	$(\text{units} * 2.0) + 300$
Anything above 601	$(\text{units} * 2.5) + 350$

Design and write a program in C that compute the appropriate amount one is supposed to pay for units consumed. **(7 mks)**

QUESTION 4 (20 MARKS)

- a) Explain the meaning of an array? **(1 mk)**
- b) Explain any three types of errors available in programming? **(6 mks)**
- c) Straight-line depreciation is the simplest and most-often-used technique, in which the company estimates the salvage value of the asset at the end of the period during which it will be used to generate revenues (useful life) and will expense a portion of **original cost** in equal increments over that period. The salvage value is an estimate of the value of the asset at the time it will be sold or disposed of; it may be zero or even negative. Salvage value is also known as scrap value or residual value.

Straight-line method:

$$\text{annual depreciation expense} = \frac{\text{cost of fixed asset} - \text{residual value}}{\text{useful life of asset}(\text{years})}$$

Required: Write a program to compute the residual value of a machine. Allow the user to read the values for annual depreciation expense, cost of fixed assets, and years.

(7 mks)

- d) With examples explain how the following types of operators are used:
- i. Logical operators **(2 mks)**
 - ii. Relational operators **(2 mks)**
 - iii. Special operator **(2 mks)**

QUESTION 5 (20 MARKS)

- a) Write a program to compute the simple interest and compound interest. **(7 mks)**
- b) What is a symbolic constant? Give an example **(3 mks)**
- c) Explain five principles of object oriented programming. **(5 mks)**
- d) Using either an appropriate data flow diagram or syntax explain how the switch is used in C programming? **(5 mks)**