

KABARAK



UNIVERSITY

UNIVERSITY EXAMINATIONS

MAIN CAMPUS

FIRST/SECOND SEMESTER, 2017/2018 ACADEMIC YEAR

**EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS
MANAGEMENT INFORMATION TECHNOLOGY/ BACHELOR OF SCIENCE IN
INFORMATION TECHNOLOGY/ BACHELOR OF SCIENCE IN COMPUTER
SCIENCE/ BACHELOR OF SCIENCE IN ACTUARIAL SCIENCE/ BACHELOR OF
SCIENCE IN ECONOMICS AND STATISTICS/ BACHELOR OF BUSINESS
INFORMATION TECHNOLOGY**

COMP 120/INTE 124/BBIT 124: STRUCTURED PROGRAMING

STREAM: (Y1S2 & Y2S1)

TIME: 11.00-1.00PM

EXAMINATION SESSION: DECEMBER

DATE: 6/12/2017

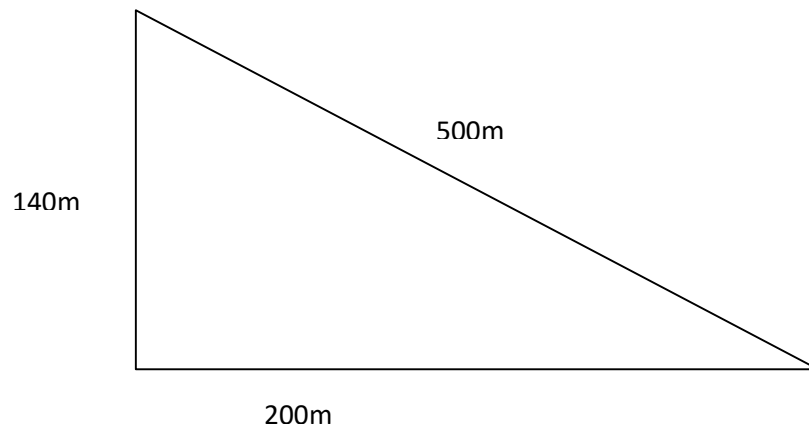
INSTRUCTIONS

- (i) Answer Question ONE (compulsory) and ANY OTHER TWO questions**
- (ii) Do not write on the question paper**
- (iii) Show your working clearly**

QUESTION ONE (30 MARKS)

- a) Define the following terms as used in programming
 - i. A USER DEFINED FUNCTION **(2marks)**
 - ii. Source code **(2marks)**
- b) Briefly Explain each of the following terms
 - i. Array **(2Marks)**
 - ii. IDENTIFIER **(2Marks)**

- iii. CONTINUE Statement (2Marks)
- c) With a simple example differentiate Function definition and function Declaration. (4Marks)
- d) Differentiate COMPILER and INTERPRETER in structured programming. (4marks)
- e) A farmer owns land that is triangular in shape, whose sides are as follows



Using the above diagram write a program that will find the area of this farm.

- (4marks)
- f) Outline the rule of naming an IDENTIFIER in C programming language. (4marks)
- g) Write a C program to SWAP of two numbers using FUNCTIONS. (4marks)

QUESTION TWO (20 MARKS)

- a) Define header file and give an example (2marks)
- b) C programs are written to solve problems given to computers by a user; computers can only do this if given the right instructions. Briefly describe the steps followed in the production of output desired by the user. (4marks)
- c) Write a program that will find the simple interest. (4marks)
- d) Write a C program that will generate natural numbers from 100 to 200 and find their sum (4marks)
- e) Outline four characteristics of C programming language. (2marks)
- f) Write a program to find FACTORIAL of a number entered by the user. (4marks)

QUESTION THREE (20 MARKS)

- a) When working with computers to solve problems, it reaches a point where we want to deal with problems that compare more than one quantity; this forces us to use comparison operators like relational operators. You have been given a situation below:

In an exam for someone to be considered to have passed, he/she must score marks that are greater than 50 in a subject and the average score must also be greater or equal to 50 in the four subjects. Use LOGICAL operators to come up with a program to perform this.

(4marks)

- b) Discuss the advantages of structured programming **(4marks)**
- c) A program was written to check if the number entered by the user is positive or negative.

Write a program to perform this.

(4marks)

- d) Perform the following

i. Define STRING

(2marks)

- ii. Write a C program to join two strings, let the strings be S1 and S2 where S1=HELLO and S2=welcome, after joining them then find the length of the resulting string.

(6marks)

QUESTION FOUR (20 MARKS)

- a) Differentiate CALL BY VALUE and CALL BY REFERENCE **(2marks)**
- b) With the help of a SWITCH statement write a program that will display days of the week **(6marks)**
- c) A Motorcycle is travelling at a speed of 20 kilometers per second to a place 400 kilometers away. Write a program to calculate how long it will take to arrive there. **(4marks)**
- d) A student scored the following marks as provided below. Use the data to write a program to find the total marks and the average of the student. **(4marks)**

SUBJECT	MARKS
UNIT1	60
UNIT2	78
UNIT3	50
UNIT4	80
UNIT5	63

- e) Discuss the DO.....WHILE as used in C programming language **(4marks)**

QUESTION FIVE (20 MARKS)

- a) Study the code extract below and answer the question that follows

```
int x = 2;
while(x < 1000)
{
    printf("%d\n", x);
    x = x * 2;
}
```

Explain the output that the code will produce. **(4Marks)**

- b) Give and explain a FUNCTION definition in C. **(4Marks)**
- c) Explain how a Two dimensional array is initialized and declaration with an example **(4Marks)**
- d) Write a program to find the **Minimum** value among the three supplied by the user **(4marks)**
- e) Write a program to determine to check whether the number is divisible by 5 and 10. **(4marks)**



**UNIVERSITY EXAMINATIONS
MAIN CAMPUS**

FIRST SEMESTER, 2018/2019 ACADEMIC YEAR
EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN
I.T/CS/CSF/ACTS

Comp 120: STRUCTURED PROGRAMMING

STREAM(Y1S2)

TIME: 2:00-4:00PM

EXAMINATION SESSION: DEC

DATE: 6/12/2018

VENUE:AUDIT

COPIES:310

INSTRUCTIONS:

Answer Question 1 and any other 2 Question

QUESTION ONE [30 MARKS]

- a) Define the following C programming terms: (3Marks)
 - i. Variable
 - ii. Syntax
 - iii. Compiler
 - b) Distinguish between Rvalues and Lvalues in a C program (2 Marks)
 - c) Differentiate between structured programming and object oriented programming (4 Marks)
 - d) Define a function and state two types of functions in C (3 Marks)
 - e) Write a C program that prompts a user to enter their first name and displays it on the screen (4 Marks)
 - f) Define a control statement and list two examples of it (3 Marks)
 - g) Briefly explain any TWO rules of naming a variable in C programming (2 Marks)
 - h) Discuss THREE major types of errors in C programs (3 Marks)
-

As members of Kabarak University family, we purpose at all times and in all places, to set apart in one's heart, Jesus as Lord. (1 Peter 3:15)



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- i) Write a program in C to test if a given number is odd or even (4 Marks)
- j) "C programming is a mother language", Explain the meaning of this statement (2marks)

SECTION B: ANSWER ANY TWO QUESTIONS

QUESTION TWO [20 MARKS]

- a) State THREE rules of writing identifier names in C programming (3 Marks)
- b) Write an **If...Else statement** to display the following student marks and grades (6 Marks)

MARKS	GRADE
70 -100	A
60 - 69	B
50 - 59	C
40 - 49	D
0 - 39	F
- c) Discuss the execution flow of a C program (6 Marks)
- d) What is an array? (2 Marks)
- e) Write a C program code to display the sentence '*Welcome to Kabarak*' (3 Marks)

QUESTION THREE [20 MARKS]

- a) Briefly explain the function of the **Continue** command in a loop (2 Marks)
- b) Discuss the exact output of the below program code? (5 Marks)


```
int main()
{
    int i;
    int j = 10;
    for( i = 0; i <= j; i ++ )
    {
        if( i == 5 )
        {
            continue;
        }
        printf("Hello %d\n", i );
    }
}
```
- c) Using a function write a C program to reverse a String e. g "*kabarak*" to read "*karabak*"(6marks)



- d) Write a C program code to implement an array whose output elements are as follows:
(5 Marks)

10
11
12
13
14
15
16
17
18
19

- e) Explain the use of pointers in C (2marks)

QUESTION FOUR [20 MARKS]

- a) Distinguish between the following: (4 Marks)
- A call by Value
 - A call by reference

- b) Briefly discuss the function of the Break command in a loop (2 Marks)

- c) What shall be the exact output of the below program code? (5 Marks)

```
#include<stdio.h>
int main(){
int i=1,j=1
for(i=1;i<=3;i++){
for(j=1;j<=3;j++){
printf("%d &d\n",i,j);
if(i==2 && j==2){
break;
}
}return 0;
}
```

- d) List THREE primary data types in C (3 Marks)

- e) Using escape sequence, write a program that will print the following (4 marks)

You

are

learning

'c' language

"Do you know C language"

- f) Explain the advantages of using arrays in C (2marks)

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QUESTION FIVE [20 MARKS]

a) Define a Token and state two examples of tokens in C (3 Marks)

b) Discuss the output of the following C program code: (6 Marks)

```
int main()
{
    int a = 6;
    int b = 10;
    int c = 3;
    while(c > 0)
    {
        a = a - 2;
        b = b - 1;
        c--;
        printf("variable a is %d, and variable b is %d\n", a, b);
    }
    return 0;
}
```

c) Write a program that converts decimal numbers to binary (6 Marks)

d) Write a **for... loop** code that can execute and display exactly the following output:
(5 Marks)**2,4,6,8,10,**



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UNIVERSITY EXAMINATIONS

MAIN/TOWN CAMPUS

FIRST/SECOND SEMESTER, 2017/2018 ACADEMIC YEAR

EXAMINATION FOR THE BACHOLER OF BUSINESS MANAGEMENT
INFORMATION TECHNOLOGY/BACHOLER OF SCIENCE IN INFORMATION
TECHNOLOGY/BACHOLER OF SCIENCE IN COMPUTER SCIENCE/BACHOLER
OF SCIENCE IN ACTURIAL SCIENCE/BACHOLER OF SCIENCE IN ECONOMICS
AND STATISTICS/BACHOLER OF BUSINESS INFORMATION TECHNOLOGY

COMP 120/INTE 124/BBIT 124: STRUCTURED PROGRAMING

STREAM: (Y1S2 & Y2S1)

TIME: 2 HRS

EXAMINATION SESSION: AUGUST

YEAR: 2018

INSTRUCTIONS

- (i) Answer Question ONE (compulsory) and ANY OTHER TWO questions**
- (ii) Do not write on the question paper**
- (iii) Show your working clearly**

QUESTION ONE (30 MARKS)

- a) Define the following terms as used in programming
 - i. A USE DEFINED FUNCTION **(2marks)**
 - ii. SOURCE code **(2marks)**
- b) Briefly Explain each of the following terms
 - i. Identifier **(2Marks)**
 - ii. Variable **(2Marks)**
 - iii. break Statement **(2Marks)**

- c) With a simple example differentiate Function definition and function CALL. (4Marks)
- d) Differentiate ASSEMBLER and INTERPRETER in programming. (2marks)
- e) An agricultural land 100 x 100 meters that has been prepared for planting requires beans to be planted at a spacing of 10cm between them on either side, on each hole only one seed is to be planted, write a program to calculate the amount of seeds required. (6marks)
- f) Outline the rules of naming identifiers in C programming language. (4marks)
- g) Write a C program to find the product of two numbers using functions. (4marks)

QUESTION TWO (20 MARKS)

- a) Define preprocessor directive and give an example (2marks)
- b) Study the code extract below and answer the question that follows

```

{
    int a,b,c;
    cout<<"Enter the two values"<<endl;
    cin>>a>>b;
    c = (a>b)? a: b;
    cout << c;
}

```

What do you think will be the output of the above program? Explain (4marks)

- c) Write a program that will find the compound interest. (4marks)
- d) Write a C program find the sum of natural numbers within a given range. (4marks)
- e) Outline four advantages of functions structured programming. (2marks)
- f) Write a program to find the product of two numbers entered by the user. (4marks)

QUESTION THREE (20 MARKS)

- a) i) What is a pointer (2marks)
- ii) Outline advantages of pointers (2marks)
- b) Discuss the difference between character constant and symbolic constant as used in C programming (4marks)
- c) A program was written to check if the number entered by the user is even or odd. Write a program to perform this. (4marks)

- d) Perform the following
- Define STRING function (2marks)
 - Write a C program to combine two strings and find the length of the generated string, (6marks)

QUESTION FOUR (20 MARKS)

- Differentiate STRING and an ARRAY in C programming (2marks)
- With the help of a switch statement write a program that will display days of the week (6marks)
- A Motorcycle is travelling at a speed of 5 kilometers per minute to place 100 kilometers away. Write a program to calculate how long it will take to arrive there. (4marks)
- Using the data below write a program that will display the grades as per the marks scored by students in class. (6marks)

RANGE OF MARKS SCORED	GRADE TO BE DISPLAYED
From 70 to 100	A
From 60 to 69	B
From 50 to 59	C
From 40 to 49	D
39 and below	F

- Describe the **goto** statement in programming (2marks)

QUESTION FIVE (20 MARKS)

- Study the code extract below and answer the question that follows

```
int x = 2;
while(x < 1000)
{
    printf("%d\n", x);
    x = x + 10;
}
```

Explain the output that the code will produce. (4marks)

- Give and explain ADVANTAGES of arrays in C. (2marks)
- Explain how a MULTI dimensional array is initialized and declaration with an example (4marks)

- d) Write a program to find the **MAXIMUM** value among the three supplied by the user
(4marks)
- e) Write a program to determine to check whether the number is divisible by 3 and 9.
(6marks)

KABARAK



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UNIVERSITY EXAMINATIONS

MAIN CAMPUS

SECOND SEMESTER, 2016/2017 ACADEMIC YEAR

EXAMINATION FOR THE DEGREE OF BSC IN BMIT

COMP 120: STRUCTURED PROGRAMMING

STREAM: [Y1S2]

TIME: 9.00-11.00 A.M

EXAMINATION SESSION: APRIL

DATE: 21/04/ 2017

INSTRUCTIONS

- 1. You must attempt Section A, plus any other two questions from section B.**
- 2. Do not write anything on this question paper.**

SECTION A:

- a. i) Identify **four** basic data types in C (2 marks)
- ii) Explain each of the **four** data types identified in a(i) above. (4 marks)
- b. Explain **four** logical operators usually used in C language, and sketch a code to show how each is used. (4 marks)
- c. With an example in each case, in terms of declarations, explain the differences between a **variable** and a **constant** as usually used in C language. (2 marks)

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- d. Using a **for loop**, write a program that would produce the output as follows: **2, 4, 6, 8, 10**, (6 marks)
- e. Explain the differences between **Formal parameters** and **Actual parameters** (4 marks)
- f. Explain the differences between a **while** loop and a **do while** loop. (2 marks)
- g. Correct the syntax in the following **C** program and show the output: (4 marks)

```
#include<stdio.h>;

int main( );

{

    int i = 3;

    while(i< 10);

    {

        printf(“%d\n”, i);

        i++;

    }

}
```

- h. . Show how would declare and initialize a pointer in c language (2marks)

QUESTION TWO..... (20 marks)

- a. Identify **four** categories of functions usually used in C language (2 marks)
- b. Use a function whose job is to add three numbers entered by the user, and returns the results to the main function to print the results on the screen. (6 marks)
- c. Write a program in **C** language that would find the memory size of a given integer variable. (6 marks)

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- d. Write a C code that would compare two integer numbers entered by the user, and display the largest number (6 marks)

QUESTION THREE..... (20 marks)

- a. Show the output of the following code: (6 marks)

```
int main()
{
    int x = 1;
    int y = 0;
    printf("x&&x = %d\n", x&&x);
    printf("x&&y = %d\n", x&&y);
    printf("x || y = %d\n", x || y);
    printf("! x = %d\n", !x);
    return 0;
}
```

- b. Discuss **three** types of decision making control **if** statements in C language. (6 marks)
- c. Construct a C code to show how to **swap** two integer numbers entered from the keyboard (6 marks)
- d. Give the differences between the following terms: (2 marks)
- i) Call by value
 - ii) Call by reference

QUESTION FOUR..... (20 marks)

- a. Explain the importance of using comments in C programming (2 marks)
- b. Study the following program and show the output: (6 marks)

```
#include <stdio.h>
int calculate_bill (int, int, int);
int main()
{
    int bill;
```

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```

int fred = 10;
int frank = 12;
int paul = 7;
bill = calculate_bill (fred, frank, paul);
printf("The total bill comes to ksh.%d.00.\n", bill);
return (0);
}
int calculate_bill (int diner1, int diner2, int diner3)
{
    int total;
    printf ("the value of dinner1 is ksh. %d\n", diner1);
    printf ("the value of dinner2 is ksh. %d\n", diner2);
    printf ("the value of dinner4 is ksh. %d\n", diner3);

    total = diner1 + diner2 + diner3;
    return total;
}

```

- c. Write a C program that would display the output as shown below (6 marks)

This is my first program

- d. Declare a character array that would contain the name, **William** and show how you can display that name as the output (2 marks)

- e. The following program has some errors, make the corrections and show the output.

(4 marks)

```

int add(int d, int e);
main( )
{
    int a, b, c;
    c = add(a, b);
    printf ( "value of c is %d", c ) ;
}

```

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```

    }
int add(int x, int y)
{   int p;
    p = e*d;
    return p;}

```

QUESTION FIVE..... (20 marks)

- Demonstrate the use of a ***switch***-case statement to test as to which of the characters a, b and c has been entered from the keyboard. (6 marks)
- Write a program in C to calculate the area of a circle whose radius is 7cm (4 marks)
- State **four** rules for naming variables C language. (2 marks)
- Write a code in C language that would be used to **swap** two integer numbers entered from the keyboard (6 marks)
- Write the output of the following C code: (2 marks)

```

#include<stdio.h>
int main()
{
    int i;
    for(i=2; i<= 20; i=i+2)
    {
        printf(" %d", i);
    }
    return 0;
}

```