1. (a) (i) Outline the function of each of the following FoxPro parameters:

    I.   cDirectory;

    II. cText.

    (4 marks)

   (ii) State a FoxPro command that could be used to carry out each of the following:

    I.   create a new project

    II. open a particular program for modification.

    (2 marks)

   (b) Explain each of the following terms as used in Visual Basic:

    (i) implicit declaration;

    (ii) explicit declaration.

    (4 marks)

   (c) Distinguish between *alter table* and *drop table* functions as used in FoxPro
       programming.   (4 marks)

   (d) Write a Visual Basic program that would prompt a user to enter the dimensions in
       meters of a college's rectangular playing field through the use of input boxes. The
       program should then compute the area covered by the playing field in hectares and
       display it through a message box. Attach the code to a command click event.
       Hint: 1 hectare = 10000 square metres.   (6 marks)

2. (a) State the property that could be used for output in each of the following Visual
       Basic controls:

    (i)   Textbox;
    (ii) Label;
    (iii) Picturebox;
    (iv) Combobox.

    (4 marks)

   (b) (i) Outline the difference between *Do....loop while* and *Do while..... loop* as used in
            visual Basic programming.   (2 marks)

       (ii) Represent the logic of the *for...next* control structure in a flow chart.

    (2 marks)

(c) Write the file extension for each of the following graphic file formats as used in FoxPro programming:

    (i)   animated Cursor;
    (ii)   device Independent Bitmap;
    (iii) windows Enhanced Metafile;
    (iv) icon.

    (4 marks)

(d) (i) Assuming a Visual Basic environment, evaluate the expression.
MyVal = x ^y * a mod b/c given that x = 5, y = 3, a = 2, b = 15, c = 5

    (2 marks)

(ii) Fig. 1 shows the interface of a Visual Basic program. Use it to answer the question that follows.
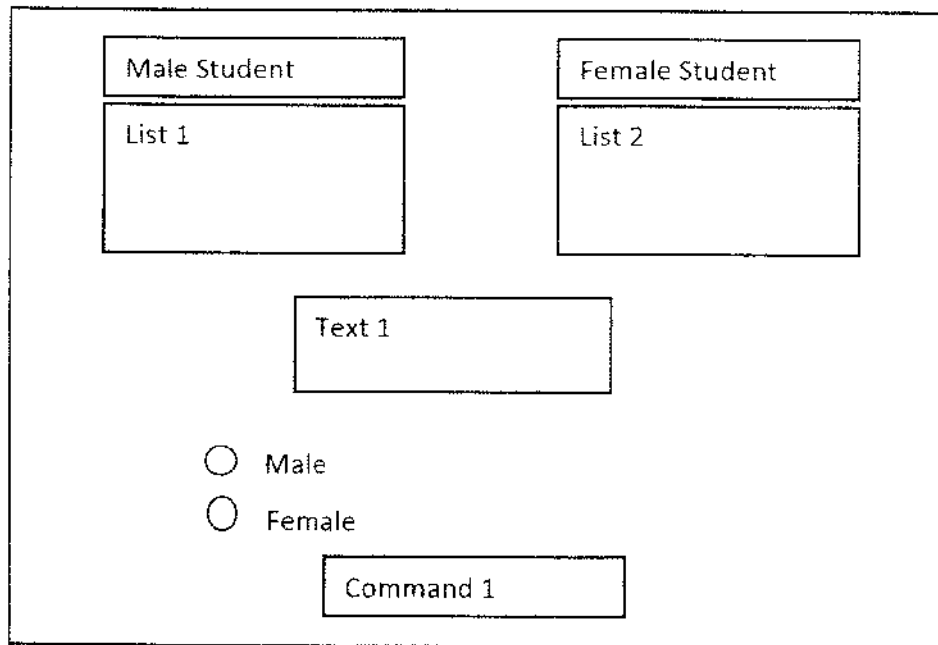

Fig. 1

Write a Visual Basic program that would allow the user to type the name of a student in the textbox and select the sex of the student. The program then will add the name of the student in the appropriate list.

    (6 marks)

3. (a) (i) State the type of error that could occur in each of the following scenarios:

    I.   removing an item from an empty queue;
    II.   push an item into a full stack.

    (2 marks)

(ii) Distinguish between *serial* and *sequential* file organization methods as used in FoxPro.
    (4 marks)

(b)   Write a Visual Basic program that could read a variable from a file named Myfile.txt stored in the root directory of drive F and display the variable through a message box. Attach the code to a command click event.

(4 marks)

(c)   The following code was written by a student during a database programming class. Use it to answer the question that follows.

```
1.  CREATE TABLE employee_details
2.      -> (personnel_no int unsigned not null auto_increment
    primary key,
3.      -> first_name varchar(20),
4.      -> last_name varchar(20),
5.      -> title varchar(30),
6.      -> age int,
7.      -> salary int,
8.      -> perks int,
9.      -> email varchar(60)
10.     -> );
```

Interpret the code.   (4 marks)

(d)   Table 1 shows foreign currency earnings in US dollars from Kenyan exports. Use it to answer the questions that follow.

Table 1

Year/Product	Coffee	Tea	Flowers	Beef
2007	400000	378000	402000	450000
2008	518000	459125	470568	580254
2009	275894	210542	302548	336580
2010	425879	548221	359875	605879

Write SQL statements that could be used to carry out each of the following operations. Use Exports as the name of the table:

(i)   compute the total amount earned by coffee and display it in a column named T_coffee;

(ii)   compute mean annual tea export and display it in a column named A_Tea;

(iii)   display the lowest foreign currency earned by beef for the period.

(6 marks)

4. (a)   (i)   Name **two** search engines used in the internet.   (2 marks)

         (ii)   Distinguish between *web master* and *web designer* as used in internet.

(4 marks)

(b)   Explain the function of each of the following FoxPro commands:

      (i)   Scatter;

      (ii)   Set Collate.

                      (4 marks)

(c)   A student created a Visual Basic program that could accept two integers through the use of textboxes and compute their sum. He entered values 10 and 40 and executed the program. The result produced was 1040:

      (i)   explain the type of error encountered;

      (ii)   state the correction needed for the program to produce the expected result.

                      (4 marks)

(d)   Fig. 2 show units registration form in a certain college. Use it to answer the question that follows.

College Units Registration

Registration Number   [_____]

This semester units

  ☐ UCU100 Communication Skills

  ☐ UCU105 Social Studies

  ☐ SCO100 Computer Fundamentals

  ☐ SCO102 Introduction to Programming

  [Register Units]   [Cancel Registration]

Fig. 2

Write an HTML code that would generate the form when run on a web browser.

                      (6 marks)

5. (a) (i) Explain each of the following JavaScript animation techniques:

      I.   position based;

      II.   time based.

(4 marks)

(ii) Write a JavaScript embedded in an HTML document that could be used to display the following output.

```
%    %    %    %
%    %    %
%    %
%
```

(6 marks)

(b) Table 2 shows the criteria used to admit patients in various wards in a hospital. Use it to answer the question that follows.

Table 2

Age	Ward
More than 40	Dependency
30-40	Special
20-29	General
10 -19	Teen
otherwise	Pediatric

Write a Visual Basic program that would accept the age of a patient through an input box. The program then outputs the ward in which a patient could be admitted and the total number of patients in the ward through a message box. Attach the code to a command click event. Use *case* and *do while* control structures. Assume 10 patients are admitted daily.

(6 marks)

(c) (i) Prudence, an IT student executed the following SQL statement.

Select COUNT (*) from payroll where title = 'Manager';

State the effect of the statement.

(2 marks)

(ii) Write FoxPro functions that could be used to:

      I.   display part of a phrase;

      II.   display the number of characters in a phrase.

(2 marks)

6.   (a)   (i)   Distinguish between *procedures* and *subroutines* as used in FoxPro programming.   (4 marks)

         (ii)   Table 3 is a database table that shows details of items sold in a computer garage. Use it to answer the questions that follow.

Table 3

ItemID	ItemName	Manufacturer	Price
HDD100	Solex Hard Disk	Solex	3500
HDD105	Kings Hard Disk	Kings	5000
FTP103	Flat screen	Kings	12000
FTP104	Flat screen	Kings	14000
MB105	Mother Board	Solex	20000
CRT102	CRT Screen	Kings	8000

Write an SQL statement to display:

I.   names of the manufacturers in the table. Each name should be displayed once;

II.   *ItemID* and *manufacturer* of all items whose price ranges from 5000 to 18000;

III.   *ItemID*, *ItemName* and *price* of all types of screens in the table arranged in descending order of the ItemID.   (6 marks)

     (b)   Write a JavaScript embedded in an HTML document to accept a mathematical figure either triangle or square. The script should then compute the area of the figure through the use of functions.   (6 marks)

     (c)   Outline the function of each of the following components of an IDE:

         (i)   immediate window;

         (ii)   properties window.   (4 marks)

7.   (a)   (i)   Write a function that could be used to carry out each of the following tasks in FoxPro programming:

           I.   display the system date;

           II.   determine the data type stored in a variable.   (2 marks)

         (ii)   Explain the term *query* as used in database systems.   (2 marks)

     (b)   Write a FoxPro program that prompts a user to enter students' scores in five subjects. The program then computes and displays the total and average mark. Use the *for* loop.   (6 marks)

(c) Table 4 shows the criteria used to nominate students for a student council position in a certain college. Use it to answer the question that follows.

Table 4

Position	Academic Grade	Discipline
President	Excellent	Extemporary
Deputy President	Excellent	Commendable
Cabinet Secretary	Very Good	Extemporary
Course Representative	Very Good	Commendable
Class Representative	default	

Write a Visual Basic program that would accept the academic grade and discipline of a student through respective textboxes. The program then outputs the position that the student qualifies for through a message box. Attach the code to a command click event. Use *If* statement.

(6 marks)

(d) Distinguish between *DBMS* and *database system*. (4 marks)

8. (a) Describe each of the following program design tools:

(i) structured chart;

(ii) decision table.

(4 marks)

(b) Write a Visual Basic program that could display even numbers between 0 and 100. The program then computes and displays the sum of the numbers through a label. Attach the code to a command click event.

(6 marks)

(c) Write an SQL statement that could be used to display records of all students whose name contains the vowel 'o' in a database table named *Student*.

(2 marks)

(d) (i) State **two** challenges encountered through the use of email in communication.

(2 marks)

(ii)   The following web page was created by a Module 2 student. Use it to answer the question that follows.

Curriculum Vitae

1. Personal Details

Name: Judy Bahati
Gender: Female
Date of Birth: 28/12/1995
Religion: Myreligion
Contact:

- o   Phone: 07xxxxxxxx

- o   email: jba@mymail.com

2. Qualification

High School: Masomo High school   KCSE B (Plus)
Undergraduate: Jitengee University   Bachelor of Science

3. Hobbies

- o   Reading Novels

- o   Listening to Music

- o   Travelling

4. Work Experience

My Work Experience

5. Referees

- o   Mary Sadak

- o   Daniel Davis

- o   Doctor Twin

Write HTML code that could be used to generate the web page when run in a web browser.

(6 marks)