THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
ADVANCED CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

136/2 **COMPUTER SCIENCE 2**

(PRACTICAL)

(For Both Schools and Private Candidates)

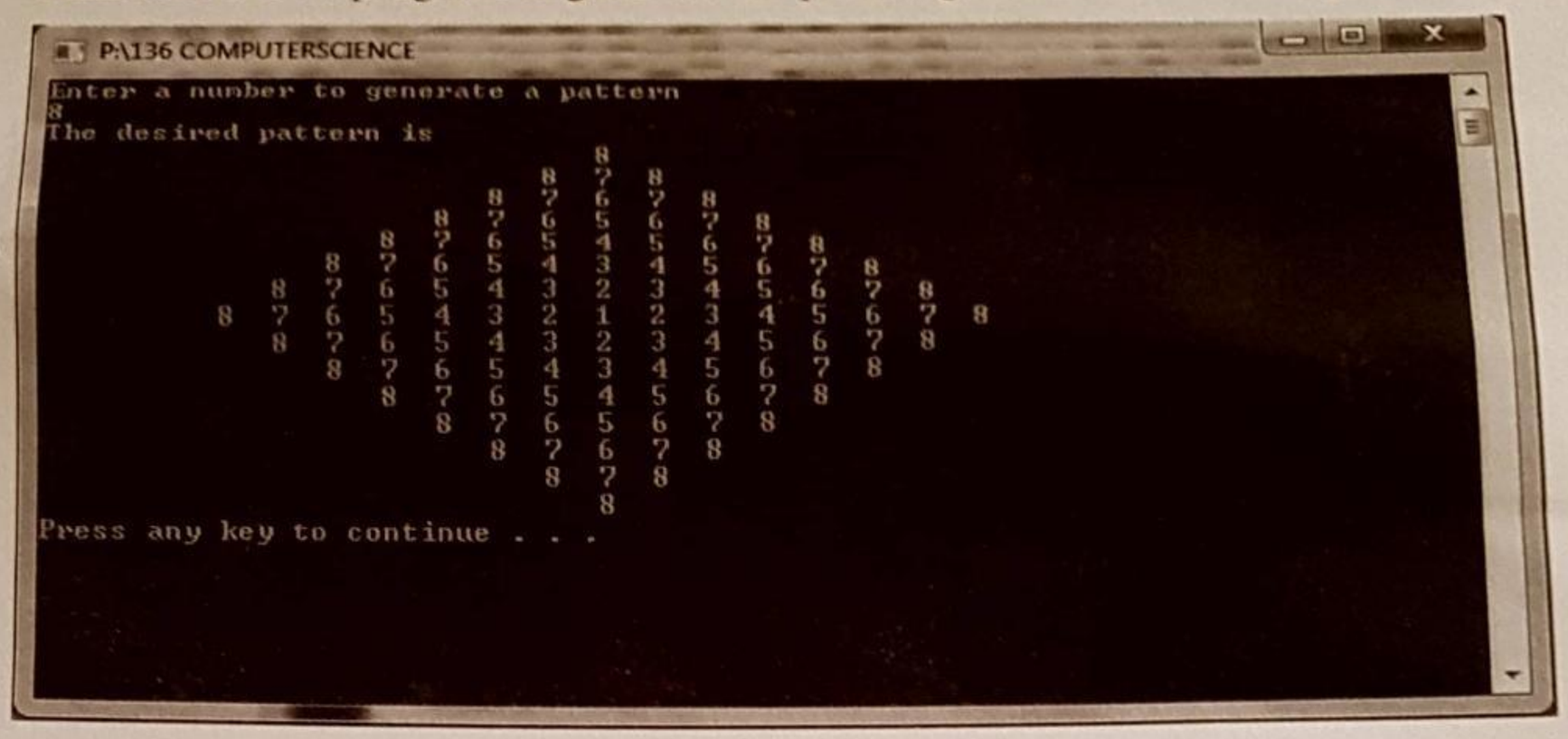
Time: 3 Hours **Year : 2021**

Instructions

1. This paper consists of **three (3)** questions.
2. Answer two **(2)** questions including question **one (1)**.
3. Submit printed codes and screenshots together with the softcopy of your work(s).
4. Save your work on the desktop in the folder named by your **Examination Number**.
5. Save your work by using the 1997-2003 version of the MS Office software you are using.
6. Check whether the **printed** work(s) are similar to the **softcopy** saved in the folder.
7. Cellular phones and any unauthorised material are **not** allowed in the examination room.
8. Type your **Examination Number** on every page of your softcopy work(s).

Answer **two (2)** questions. Question number **one (1)** is compulsory.

1. (a) Construct a C++ program to generate the pattern given in the following screenshot:

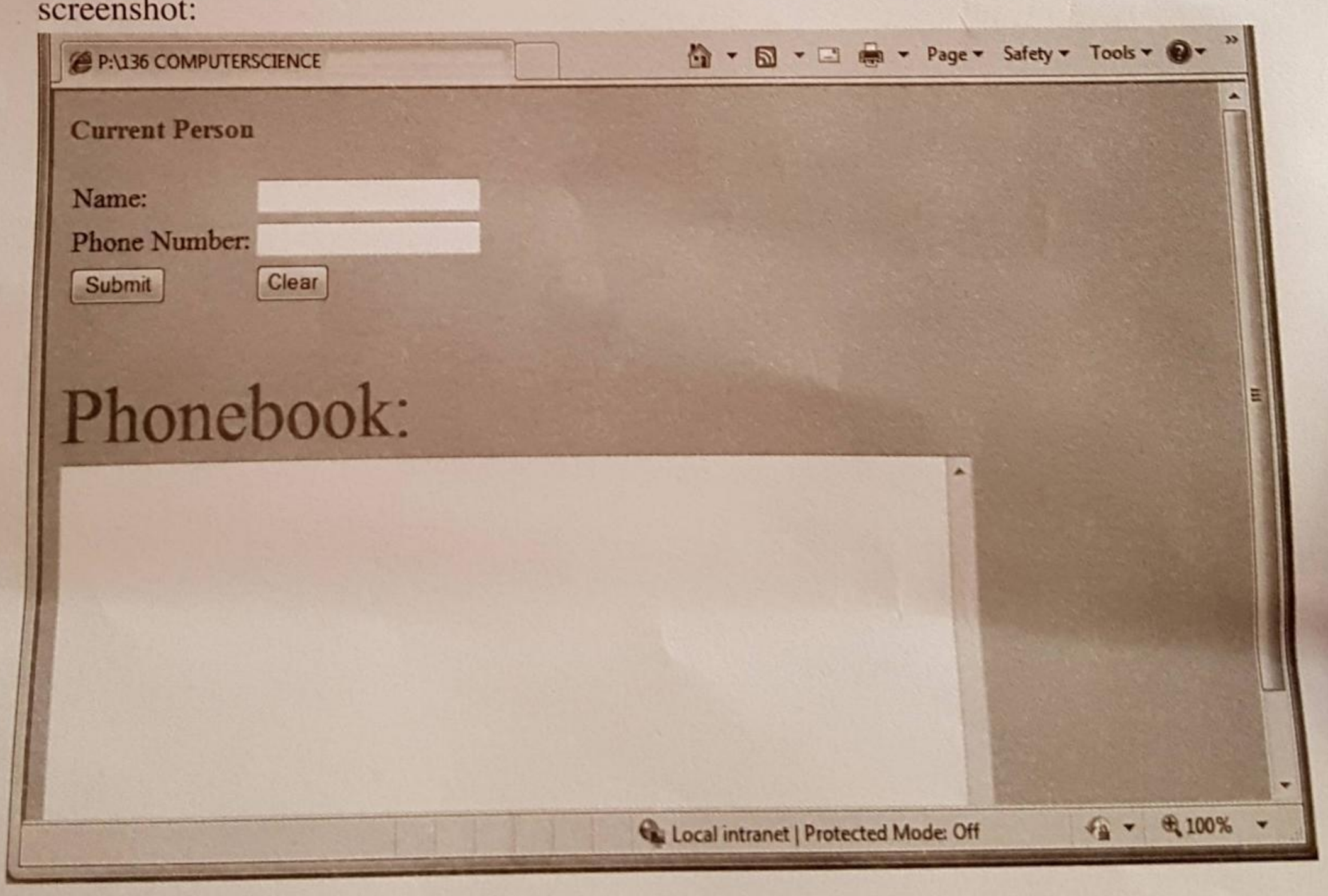


HINT: (A user should enter any number which is less than 11 to generate a pattern).

(b) Construct a C++ program that finds the sum of the first n positive integers. The program should prompt a user to enter the number of terms to be added.

(25 marks)

2. (a) Use basic HTML and JavaScript codes to design a phonebook which will enable a user to submit the name and the telephone number. The entries should be displayed in the text area after clicking a command button "Submit" and disappear when a user clicks a command button "Clear". The interface of the phonebook is given in the following screenshot:



Phonebook description:

- Font size and color of the heading "Current Person" should be h3 and green respectively.
- Font size and color of the word "Phonebook" should be 15 and red respectively.
- Background color of the body should be pink.
- The width and height of text area must be 15 and 70 respectively.

(b) Use basic HTML and JavaScript codes to design a picture gallery which can enable a user to magnify a picture after clicking the desired picture. The gallery should display a message "Click a Picture" after clicking a command button "Click Me to Magnify". The picture gallery should be as follows:

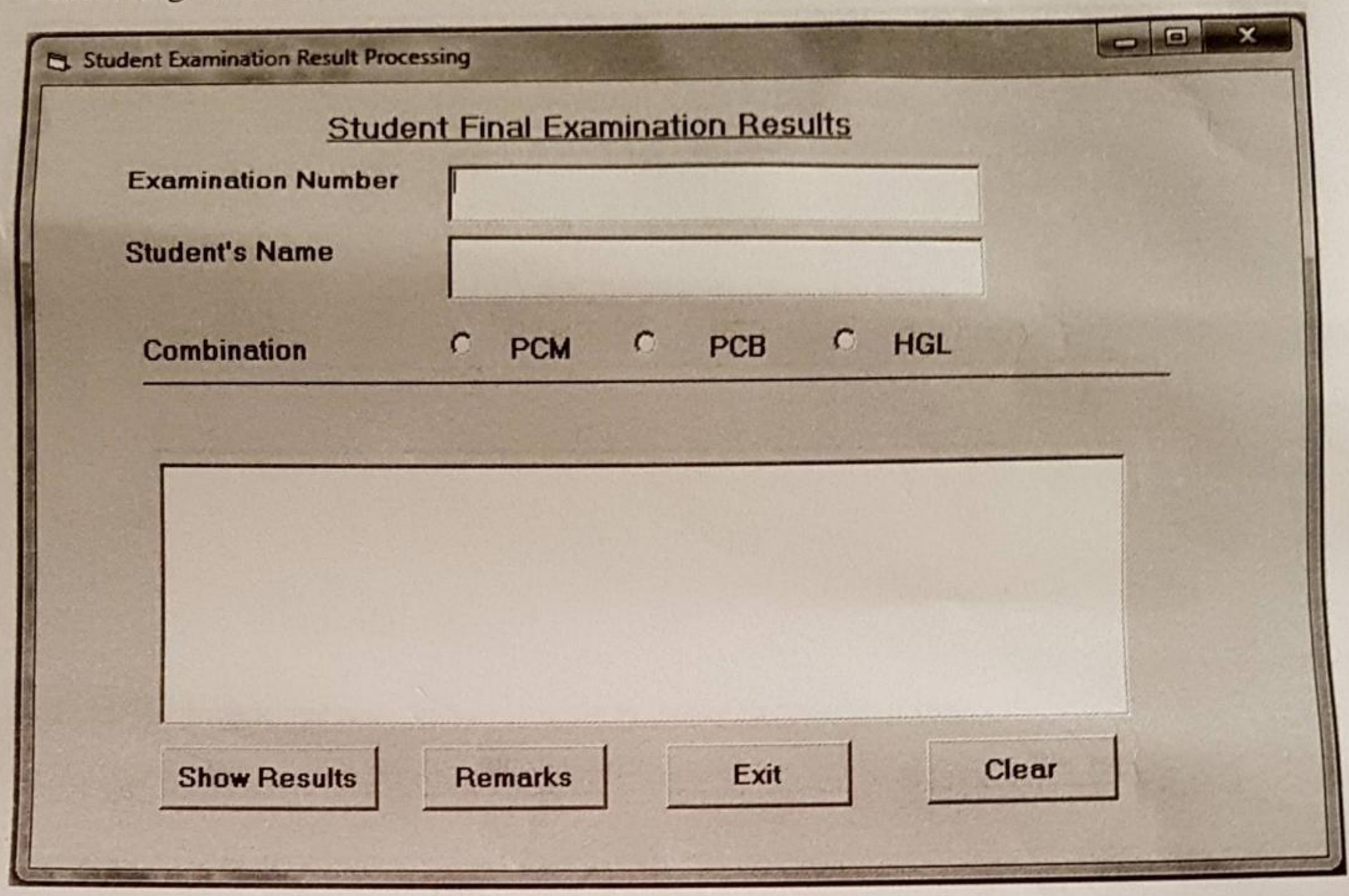
HINT: (Use your favorite images from the pictures folder available in your computer).

Gallery description:

- The width and height of each picture should be 170px and 150px respectively.
- The table border should be 1.

(25 marks)

3. (a) Use Visual Basic program to design the following "Students Examination Result Processing" interface:



Interface Description:

- The height and width of the form must be 6690 and 10185 respectively.
- The option buttons for combinations should be in form of control array with the name "Comb" and index 0, 1, and 2 respectively.
- The width and height of the ListBox control named List1 is 7455 and 2010 respectively.
- PCM stands for Physics, Chemistry and Advanced Mathematics.
- PCB stands for Physics, Chemistry and Biology.
- HGL stands for History, Geography and Language.

(i) Add six TextBox controls to the interface named P1, P2, P3, P4, Text2 and Text3. Change visible property for these controls to "False" so that they are hidden when the program run.

(ii) Add a label having an *empty* caption to the interface just below the horizontal line and name it Label4. Change the height and width properties of Label4 to 375 and 8295 respectively.

(b) Use Visual Basic codes to activate the interface created in part (a) in order to perform the following tasks:

(i) Prompt a user to enter marks for each subject in a selected combination. The General Studies subject is compulsory for all students. The combination options should be stored in the textboxes named "Text2" as PCM, PCB or HGL and the entered marks should be stored in the Textboxes P1, P2, P3 and P4.
(ii) Display on Label4 caption a message "Results for Examination Number, Student Name and Combination." Where by Examination Number, Student Name and Combination are the inputs entered by the user.
(iii) Find the average of the marks stored in textboxes P1, P2, P3 and P4 and store in a textbox named "Text3".
(iv) Display in List1 the subject name with their respective marks entered and the average marks when a user clicks the command button "Show Results".
(v) Give a message "Congratulation! You have passed to join the University" if the average is greater or equal to 40% otherwise it should give a message "Sorry your average is less than 40! Please re-sit the exam" when a command button "Remarks" is clicked.
(vi) Exit the program when a user clicks an "Exit" button.
(vii) Clear all the visible inputs and the outputs when a user clicks a "Clear" button.

(25 marks)