

- 1 (a) Outline a circumstance under which each of the following controls may be used in a Visual Basic program.
- (i) Timer;
  - (ii) PictureBox;
  - (iii) Checkbox. (3 marks)
- (b) Explain the function of each of the following in a Visual Basic Integrated Development Environment.
- (i) Menu bar;
  - (ii) Object browser;
  - (iii) Form layout window. (6 marks)
- (c) Distinguish between *caption* and *name* properties as used in a Visual Basic Program. (4 marks)
- (d) Write a program in Visual Basic that uses functions to generate acceptable remarks based on the average score that a student obtains in an examination as shown in Table 1. The program should display the remarks on a label. Use select case statement. Attach the program to a command button. (7 marks)

Table 1

Average Score	Remarks
From 0 to 299	Mean below average
From 200 to 299	Average mean
From 300 to 399	Good mean
From 400 to 499	Excellent mean
Any value	Illegal entry

- 2 (a) Outline the function of each of the following properties of a form.
- (i) borderstyle;
  - (ii) windowstate;
  - (iii) backcolour. (3 marks)
- (b) With the aid of an example in each case, distinguish between a *method* and an *event* as used in a Visual Basic Program. (4 marks)

- (c) The following is an error statement in a Visual Basic program. Use it to answer the question that follows:

```
On Error { GoTo [ line | 0 | -1 ] | Resume Next }
```

↓            ↓                            ↓  
(i)        (ii)                            (iii)

Explain the function of the part labelled (i), (ii) and (iii) when used in a program statement. (6 marks)

- (d) (i) Determine the output from each of the following Visual Basic logical statements. (2 marks)

I If (expression1) is true and (expression2) is true;

II If (expression1) is false or (expression2) is true.

- (ii) Write a program in Visual Basic that accepts the number  $x$  through the use of a textbox. If the value of the expression  $x^3 - x$  is greater or equals to 100, the program displays the message "A big number!" on a label, otherwise output "A small number!". (5 marks)

- 3 (a) Outline **three** activities that can be done on the project window in a Visual Basic Program. (3 marks)

- (b) Explain each of the following terms as used in variable declarations in a Visual Basic Program. (6 marks)

(i) lifetime;

(ii) scope;

(iii) datatype.

- (c) Distinguish between `variablename = InputBox ("message")` and `variablename = Val (InputBox ("message "))` Statement as used in Visual Basic programming. (4 marks)

- (d) (i) Write a Visual Basic statement that would display the value 40976 formatted to each of the following:

I. date;

II. currency. (2 marks)

- (ii) The length of the hypotenuse of a right-angle triangle is given by the formula  $c = \sqrt{a^2 + b^2}$  where  $a$  and  $b$  are the perpendicular sides and  $c$  is the hypotenuse

Write a program in Visual Basic that would accept the values  $a$  and  $b$  through the use of a text box, compute the hypotenuse and display the results on a message box. (5 marks)

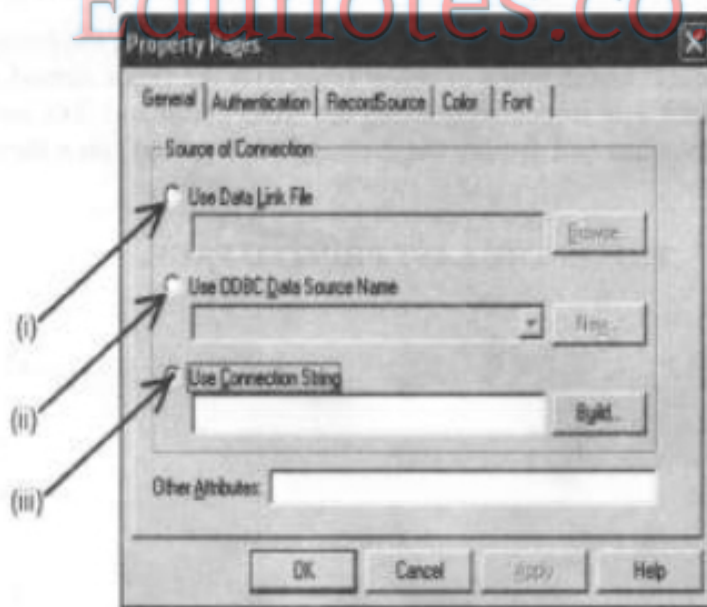
- 4 (a) Outline **four** methods of a list box as used in a Visual Basic program. (4 marks)
- (b) Distinguish between *on error go to 0* and *on error go to -1* statements in a Visual Basic program. (4 marks)
- (c) Explain the reasons for applying each of the following in an array in a Visual Basic program. (6 marks)
- (i) Control array;
  - (ii) Array bound;
  - (iii) Redim statement.
- (d) Write a program in Visual Basic with a label and text box named *label1* and *Text1* respectively that uses a procedure to performs the following sequence of events when the command button is clicked. Use *with* statements. (6 marks)
- TextBox1 is disabled;
  - The background colour of TextBox1 becomes yellow;
  - Label1 becomes visible;
  - Text on the label to have a blue colour;
  - The font of text on the label to be bold.

- 5 (a) State the correct data type in Visual Basic programming for each of the following description of statements. (4 marks)
- (i) The height of a student (in cm);
  - (ii) The number of children in a class;
  - (iii) The academic grade of a student;
  - (iv) Country status whether poor or rich.
- (b) Ali a programmer created a Visual Basic program and ran it in his computer, he observed the error "object not found" displayed on the screen. Explain **two** causes of this error. (4 marks)

- (c) Explain each of the following as used in data structures: (6 marks)
- (i) bubble sort;
  - (ii) binary search;
  - (iii) Tree traversal.
- (d) Write a program in Visual Basic that would display the following pattern on a picturebox: (6 marks)

```
1 2 3 4 5 6
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
```

- 6 (a) Outline **three** ways in which a project can be started in a Visual Basic program window. (3 marks)
- (b) Distinguish between *adcmdtext* and *adcmdtable* values as used ADO Data controls in a Visual Basic Program. (4 marks)
- (c) Figure 1 shows a dialog box used to prompt one to choose one the three mechanisms for connecting to a database.



Explain the circumstance that may lead one to use each of the options labelled (i), (ii) and (iii). (6 marks)



- (d) Write a program in Visual Basic that would compute the summation of integers from 20 to 50 and display the results on a label. Use a *For* loop statement. (7 marks)
- 7 (a) Outline **four** events of an ADO Data control as used in Visual Basic Programming. (4 marks)
- (b) Distinguish between *public* and *local* array declaration in a Visual Basic program. (4 marks)
- (c) Describe the **two** properties to be set on a textbox in order to display data from a database in Visual Basic. (4 marks)
- (d) Write a program in Visual Basic that accepts a name and a score of six students in a test through the use of an `inputbox()`. The program should then display the names scores and the average scores on a picture box. Attach the code to a command button. (8 marks)
- 8 (a) Distinguish between a *listbox* and a *combobox* as used in Visual Basic. (4 marks)
- (b) Write an algorithm to implement each of the following in a stack data structures: (6 marks)
- (i) Check if it is full;
- (ii) Add an element.
- (c) Eric a programmer intends to create an application in Visual Basic program and would like to connect a database to bound controls on the forms. Describe **two** controls that would help him achieve his goal. (4 marks)
- (d) Write a program in Visual Basic that on command button click, the program add the values from three text boxes into a database table with the fields named, *AdNo*, *StudName* and *StudClass* respectively using the ADO command. The program should then update the database and display the message "data added" on a messagebox (). (6 marks)

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