GENERAL INFORMATION:

- **Pages 2–11 contain the Delphi memoranda of possible solutions for QUESTIONS 1 to 3 in programming code.**
- **Pages 12–22 contain the Java memoranda of possible solutions for QUESTIONS 1 to 3 in programming code.**
- **Pages 23–30 contain ADDENDA A to F which includes a marking grid for each question for candidates using either one of the two programming languages.**
  Copies of the appropriate ADDENDA should be made for each learner to be completed during the marking session.

SECTION A: DELPHI

QUESTION 1: PROGRAMMING AND DATABASE

```
unit Question1_U;

interface

uses
  Windows, Messages, SysUtils, Variants, Classes, Graphics, Controls, Forms,
  Dialogs, StdCtrls, DB, ADODB, Grids, DBGrids, ExtCtrls, Buttons;

type
  TfrmRec = class(TForm)
    Panel1: TPanel;
    Panel2: TPanel;
    btnA: TButton;
    btnB: TButton;
    btnC: TButton;
    btnD: TButton;
    btnE: TButton;
    btnF: TButton;
    btnG: TButton;
    BitBtn1: TBitBtn;
    qryRec: TADOQuery;
    tblRecAg: TDataSource;
    grdRec: TDBGrid;

    procedure btnAClick(Sender: TObject);
    procedure btnBClick(Sender: TObject);
    procedure btnCClick(Sender: TObject);
    procedure btnDClick(Sender: TObject);
    procedure btnEClick(Sender: TObject);
    procedure btnFClick(Sender: TObject);
    procedure btnGClick(Sender: TObject);
  private
    { Private declarations }
  public
    { Public declarations }
  end;

var
  frmRec: TfrmRec;
implementation

{$R *.dfm}
```

See ADDENDUM A for alternatives and marking guidelines

```
procedure TfrmRec.btnAClick(Sender: TObject);
begin
  qryRec.Active := False;                                    //QUESTION 1.1
  qryRec.SQL.Text := 'SELECT *✓ FROM tblDams✓ ORDER BY HeightOfWall✓ ASC';
  qryRec.Active := True;
end;                                                                  (3)
//=============================================================================
procedure TfrmRec.btnBClick(Sender: TObject);                //QUESTION 1.2
var
  pr : String;
begin
  qryRec.Active := False;
  pr := InputBox('Large Towns', 'Enter the name of the province', ''); ✓
  qryRec.SQL.Text := 'SELECT TownName, Population✓ FROM tblTowns WHERE✓
       Population > 100000✓ AND✓ Province = "' + pr + '"'✓;
    qryRec.Active := True;
end;                                                                  (6)
//=============================================================================
procedure TfrmRec.btnCClick(Sender: TObject);                //QUESTION 1.3
begin
  qryRec.Active := False;
  qryRec.SQL.Text := 'SELECT DamID, DamName✓, (YEAR(NOW())✓ - YearCompleted✓)
       AS Age✓, ROUND (DamLevel / Capacity * 100✓, 1✓) AS Percentage✓ FROM
       tblDams';
  qryRec.Active := True;
end;                                                                  (7)
//=============================================================================
procedure TfrmRec.btnDClick(Sender: TObject);                //QUESTION 1.4
begin
  qryRec.Active := False;
  qryRec.SQL.Text := 'SELECT Province✓, COUNT(*)✓ AS CriticalTowns✓ FROM
       tblTowns WHERE WaterRestrictions = TRUE✓ GROUP BY Province✓';
  qryRec.Active := True;
end;                                                                  (5)
//=============================================================================
procedure TfrmRec.btnEClick(Sender: TObject);                //QUESTION 1.5
begin
  qryRec.Active := False;
  qryRec.SQL.Text := 'SELECT DISTINCT Province✓ FROM tblTowns✓, tblDams✓ WHERE
     tblTowns.DamID✓ = tblDams.DamID✓ AND River✓ = "Vaal River"✓';
  qryRec.Active := True;
end;                                                                  (7)
//=============================================================================
procedure TfrmRec.btnFClick(Sender: TObject);                //QUESTION 1.6
begin
  qryRec.Active := False;
  qryRec.SQL.Text := 'UPDATE tblTowns✓ SET✓ WaterRestrictions = True✓ WHERE
      Province = "North West"✓';
  qryRec.ExecSQL;
  MessageDlg('Records Processed Successfully',mtInformation,[mbok],0);
end;                                                                  (4)
//=============================================================================
procedure TfrmRec.btnGClick(Sender: TObject);                //QUESTION 1.7
begin
  qryRec.Active := False;
  qryRec.SQL.Text := 'DELETE✓ FROM tblDams✓ WHERE HeightOfWall < 11.50✓';
  MessageDlg('Records Processed Successfully',mtInformation,[mbok],0);
  qryRec.ExecSQL;
end;                                                                  (3)
//=============================================================================
end.                                                                 [35]
```