Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2012

INFORMATION TECHNOLOGY P1
INLIGTINGSTEGNOLOGIE V1
MEMORANDUM

MARKS/PUNTE: 120

This memorandum consists of 10 pages.
Hierdie memorandum bestaan uit 10 bladsye.

QUESTION/VRAAG 1 DATABASE AND DELPHI (30 marks/punte)

LO/LU 11.4.15

```
procedure TForm1.Button1Click(Sender: TObject);
begin✓
   qrytuckshop.Active := false;
   qrytuckshop.SQL.text := 'select *✓ from Suppliers ✓order by Supplier✓';
   qrytuckshop.active := true;
   SetGridColumnWidths(DBGrid1);
end;

procedure TForm1.Button2Click(Sender: TObject);
begin
   qrytuckshop.Active := false;
   qrytuckshop.SQL.text := 'select Description, UnitPrice✓ from Stock ✓where Type =
"Sweets"✓';
   qrytuckshop.active := true;
   SetGridColumnWidths(DBGrid1);
end;

procedure TForm1.Button3Click(Sender: TObject);
begin
   qrytuckshop.Active := false;
   qrytuckshop.SQL.text := 'select *✓ from Stock ✓where Type = "Chips"✓ and SupplierID =
"W2GEL"✓';
   qrytuckshop.active := true;
   SetGridColumnWidths(DBGrid1);
end;

procedure TForm1.Button4Click(Sender: TObject);
var
  ssupplier : string;
begin
   ssupplier := inputbox('Enter supplier','',''); ✓
   qrytuckshop.Active := false;
   qrytuckshop.SQL.text := 'select * ✓from Suppliers✓ where SupplierNo = "'+ssupplier+'"✓';
   qrytuckshop.active := true;
   SetGridColumnWidths(DBGrid1);
end;
```

```
procedure TForm1.Button5Click(Sender: TObject);
begin
  qrytuckshop.Active := false;
  qrytuckshop.SQL.text := 'select supplier, description, unitprice ✓from Suppliers✓, Stock✓
where Suppliers.SupplierNo = Stock.SupplierID✓ and (Type like "%Drink%"✓ or Type like
"%Water%"✓ or Type like "%Juice%✓")';
  qrytuckshop.active := true;
  SetGridColumnWidths(DBGrid1);
end;

procedure TForm1.Button6Click(Sender: TObject);
begin
  qrytuckshop.Active := false;
  qrytuckshop.SQL.text := 'select count(*)✓as [Number of Different Sweets] ✓ from Stock
✓where Type = "Sweets"✓';
  qrytuckshop.active := true;
  SetGridColumnWidths(DBGrid1);
end;

procedure TForm1.Button7Click(Sender: TObject);
begin
  qrytuckshop.Active := false;
  qrytuckshop.SQL.text := 'select Stockid, Type, description, unitprice✓, format✓
(14/100*unitprice✓, "Currency"✓) as [VAT] ✓ from Stock✓';
  qrytuckshop.active := true;
  SetGridColumnWidths(DBGrid1);
end;

procedure TForm1.Button8Click(Sender: TObject);
begin
  qrytuckshop.Active := false;
  qrytuckshop.SQL.text := 'insert into Suppliers✓ values ✓ ("RJSALE","RJ SALES","21 Union
Ave","0437211895")✓';
  qrytuckshop.execsql;
  qrytuckshop.sql.text := 'select *✓ from suppliers'✓;
  qrytuckshop.active := true;
  SetGridColumnWidths(DBGrid1);
end;
```

QUESTION/VRAAG 2 (40 marks/punte)

LO/LU 11.4.8, 11.4.9, 11.4.10

2.1	Declare other arrays (global)	1
	Procedure Items under public	1
	Procedure Heading	1
	Loop	1
	Get Item	2
	Get Units	2
	Get Price per Item	2
		10

2.2	Randomize	1
	Call statement	1
	Columns	1
	Heading	2
	Initialise profit variable	1
	loop	1
	Get randomised quantities	1
	Calculate excl vat	1
	Calculate incl vat	1
	Calculate selling price per item	1
	Display items and amounts to two decimal places	3
	Calculate profit	1
	Display profit outside loop to two decimal places	2
		17

2.3	Sorting code (3 for swapping matches, 2 for loops, 1 for if)	6
	Initialising of variables needed	2
	Loop (while)	1
	If statement (mod 5 = 0)	1
	Increase week counter	1
	Display week heading	1
	Display learners name	1
		13

SAMPLE SOLUTION

```
unit Question2_u;

interface

uses
  Windows, Messages, SysUtils, Variants, Classes, Graphics, Controls, Forms,
  Dialogs, Menus, StdCtrls, ComCtrls, Buttons;

type
  TForm1 = class(TForm)
    RichEdit1: TRichEdit;
    Button1: TButton;
    Button2: TButton;
    BitBtn1: TBitBtn;
    procedure FormActivate(Sender: TObject);
    procedure Button1Click(Sender: TObject);
    procedure Button2Click(Sender: TObject);
  private
    { Private declarations }
  public
    procedure Items;
  end;

var
  Form1: TForm1;
  arrItem : array[1..50] of string;
  arrName : array[1..50] of string;
  arrPrice : array[1..50] of real;
  arrunits : array[1..50] of integer;
  icount : integer;
  arrLearners : array[1..20] of string =
('John','Andrea','Phillip','Sazi','Mihlali','Zac','Gabriella','Lisa','Thomas','Siposethu','Sihle','J
ack','Jonathan','Okuhle','Shaun','Henry','Norman','Chantel','Liz','Sophia');
implementation

{$R *.dfm}

procedure TForm1.FormActivate(Sender: TObject);
var
  myfile : textfile;
  soneline : string;

begin
  if fileexists('Stock.txt')<>true then
    begin
      ShowMessage('File does not exist');
      Exit;
    end;
```

```
  Reset(myfile);
  icount := 0;
  while not eof(myfile) do
    begin
      readln(myfile, soneline);
      inc(icount);
      arrItem[icount] := soneline;
    end;
  closefile(myfile);
end;

procedure TForm1.Items;
var
  k, ipos, iunits : integer;
  runitprice : real;
begin
  for k := 1 to icount do
    begin
      ipos := pos(',',arrItem[k]);
      arrName[k] := copy(arrItem[k], 1, ipos -1);
      delete(arrItem[k],1,ipos);
      ipos := pos(',',arrItem[k]);
      arrunits[k] := strtoint(copy(arrItem[k],1,ipos-1));
      delete(arrItem[k],1,ipos);
      ipos := pos(',',arrItem[k]);
      runitprice := strtofloat(arrItem[k]);
      arrPrice[k] := runitprice/arrunits[k];
    end;
end;

procedure TForm1.Button1Click(Sender: TObject);

var
  k, iquantity : integer;
  rvat, rincvat, rexclvat, rselling, rprofit : real;
begin
   Randomize;
   Items;
   richedit1.Paragraph.tabcount := 4;
   richedit1.Paragraph.Tab[0] := 50;
   richedit1.Paragraph.Tab[1] := 200;
   richedit1.Paragraph.Tab[2] := 250;
   richedit1.Paragraph.Tab[3] := 300;
   richedit1.Paragraph.Tab[4] := 350;
   richedit1.Lines.add('Quantity'+#9+'Description'+#9+'Excl VAT'+#9+'Incl
VAT'+#9+'Selling Price Per Unit');
   rprofit := 0;
   for k := 1 to icount do
```

```
    Begin
      iquantity := random(20)+1;
      rexclvat := arrprice[k]*iquantity*arrunits[k];
      rincvat := (arrprice[k] * 14 / 100 + arrprice[k]) * arrunits[k]*iquantity;
      rselling := (arrprice[k]*14/100+arrprice[k]) + arrprice[k] * 20/100+arrprice[k];
      richedit1.lines.add(inttostr(iquantity) + #9 + arrName[k] + #9 + floattostrf(rexclvat,
fffixed, 6, 2) + #9+floattostrf(rincvat,fffixed,6,2)+#9+floattostrf(rselling,fffixed,6,2));
      rprofit := rprofit + (rselling*iquantity*arrunits[k] - rincvat);
    end;

richedit1.lines.add('');
    richedit1.Lines.add('Profit if ALL stock sold: '+floattostrf(rprofit,fffixed,10,2));
end;

procedure TForm1.Button2Click(Sender: TObject);
var
  k, l, iweek : integer;
  stemp : string;
begin
  for k := 1 to 19 do
    begin
    for l := k + 1 to 20 do
      begin
        if arrlearners[k] > arrlearners[l] then
          begin
            stemp := arrlearners[k];
            arrlearners[k] := arrlearners[l];
            arrlearners[l] := stemp;
          end;
      end;
    end;

      k := 0;
      iweek := 0;
      while k <> 20 do
        begin

          if k mod 5 = 0 then
             begin
               inc(iweek);
               richedit1.lines.add('');
               richedit1.lines.add('Week '+inttostr(iweek));
             end;
          inc(k);
          richedit1.lines.Add(arrLearners[k]);
        end;
end;

end.
```

QUESTION/VRAAG 3 **(44 marks/punte)**

3.1	3.1.1	Function heading	1
		Find length	1
		If correct true else false	2
	3.1.2	Procedure added under public	1
		Procedure heading with correct parameters	1
		Copy year, month, day	3
		If year starts with '0' then add 20 else add 19	2
		Create dob in following format yyyy/mm/dd	1
	3.1.3	Function heading	1
		Copy gender digit	1
		If less than 5 then F else M	3
	3.1.4	Function heading	1
		loop	1
		Find odd positions and add	1
		Find even positions and form new string	2
		Multiply even string by 2 add the digits	2
		Add the even and odd answers	1
		Subtract the second digit from 10 to create a 'check' digit	1
		Copy the last digit of id number	1
		If the check digit equals the last digit then verify true else false	3
			30

3.2	Enter ID number	1
	Loop – to ensure that ID number has length of 13 digits; if not display a message and re-enter	4
	If correct length then do all call statements and display all info else display message that ID number is invalid	2
	Message that ID is verified	1
	Call dateofbirth	1
	Gender call statement and assign Male and Female	3
	Display date of birth	1
	Display Gender	1
		14

SAMPLE SOLUTION

```
unit Question3_u;

interface

uses
  Windows, Messages, SysUtils, Variants, Classes, Graphics, Controls, Forms,
  Dialogs, Buttons, StdCtrls, ComCtrls;
```

```
type
  TForm1 = class(TForm)
    RichEdit1: TRichEdit;
    Button1: TButton;
    BitBtn1: TBitBtn;
    procedure Button1Click(Sender: TObject);
  private
    { Private declarations }
  public
    procedure dateofbirth(sid:string; var sdob : string);
  end;

var
  Form1: TForm1;

mplementation

{$R *.dfm}

function lengthid (sid : string) : boolean;
begin
  if length(sid) = 13 then
    lengthid := true
   else
    lengthid := false;
end;

procedure TForm1.dateofbirth(sid:string; var sdob : string);
var
  syy, syear, smm, sdd : string;
begin
  syy := copy(sid,1,2);
  if syy[1] = '0' then
    syear := '20' + syy
  else
    syear := '19' + syy;
  smm := copy(sid,3,2);
  sdd := copy(sid,5,2);
  sdob := syear + '/' + smm + '/' + sdd;
end;
function Gender(sid : string) : char;
var
  igen : integer;
begin
  igen := strtoint(copy(sid,7,1));
  if igen < 5 then
    Gender := 'F'
  else
    Gender := 'M';
end;
```

```
function Verify(sid : string) : boolean;
var
  k, ioddpos, ieven, ievennum, ianswer, ilast, icheck : integer;
  sevenpos : string;
begin
  for k := 1 to 12 do
    begin
     if k mod 2 = 1 then
       ioddpos := ioddpos + strtoint(copy(sid,k,1))
      else
       sevenpos := sevenpos + copy(sid,k,1);
    end;
ieven := strtoint(sevenpos) * 2;
   for k := 1 to length(inttostr(ieven)) do
     begin
       ievennum := ievennum + strtoint(copy(inttostr(ieven),k,1));
     end;
   ianswer := ievennum + ioddpos;
   ilast := 10 - strtoint(copy(inttostr(ianswer),2,1));
   icheck := strtoint(copy(sid,13,1));
   if ilast = icheck then
     verify := true
   else
     verify := false;
end;
procedure TForm1.Button1Click(Sender: TObject);
var
 sid, sdob, sgender : string;
begin
  sid := inputbox('Enter ID','','');
  while lengthid(sid) = false do
    begin
     ShowMessage('ID number must consist of 13 digits');
     sid := inputbox('Enter ID','','');
    end;

if verify(sid) = true then
   begin
    richedit1.Lines.add('ID number verified');
    dateofbirth(sid,sdob);
    if gender(sid) = 'M' then
      sgender := 'Male'
    else
      sgender := 'Female';
    richedit1.Lines.add('Date of Birth: '+ sdob);
    richedit1.lines.add('Gender: '+sgender);
   end
  else
    richedit1.lines.add('ID number is invalid');
end;

end.
```