Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 11

NOVEMBER 2019

INFORMATION TECHNOLOGY P1 MARKING GUIDELINE

MARKS: 150

This marking guideline consists of 13 pages.

NAME OF LEARNER:				
TOTAL QUESTION 1	**TOTAL QUESTION 2**	**TOTAL QUESTION 3**	**TOTAL QUESTION 4**	**TOTAL**
/38	**/38**	**/38**	**/36**	**/150**

QUESTION 1		MAX. MARKS	MARKS ACHIEVED
1.1	**BUTTON: [Q1.1 – Start Shopping]** Get the surname from the edit box ✓ Generate a random number ✓ in correct range from 1 to 1034 inclusive ✓ Create the password with the first 3 characters ✓of the surname and the random number ✓ Display the password ✓in a showmessage component	**6**	
1.2	**BUTTON: [Q1.2 – Add to Cart]** Get value from sedQty ✓ Use case or nested if statements ✓ with rpgChoice itemindex ✓ Calculate amount to pay unit price constant ✓ multiplied by quantity from sedQty ✓ Calculate the total amount due: add the amount to pay ✓ to rgrandtotal (global variable) ✓ **Compile a string:** • with the product name ✓ • amount to pay per item ✓formatted to currency ✓ • using tabstop ✓ For all three products ✓ Display the string in the richedit ✓	**13**	

1.3	**BUTTON: [Q1.3 – Verify Card]** Get the card number from the editbox ✓ **Check for digits 0 to 9:** **<u>Method 1: Remove '-' from string:</u>** Delete 5th character ✓ Delete 9th character ✓ Delete 13th character ✓ In the correct order ✓ Set Boolean variable to true ✓ Loop ✓ from 1 to 16 ✓ if character ✓is not a digit from 0 to 9 ✓then set Boolean variable to false ✓ if Boolean variable = true then ✓ set font style of btnQ1_4 to bold ✓ else ✓ show a message that the card is invalid ✓ **OR** **<u>Method 2: Build a new string:</u>** (local string variables are automatically initialised to empty strings) Use a loop for the length of the card number ✓ if character ✓ <> '-'✓then add that character to the new string ✓ Check each character of the new string: Set Boolean variable to true ✓ Loop ✓ from 1 to 16 or length of the new string ✓ if character ✓ is not a digit from 0 to 9 then ✓ set Boolean variable to false ✓ If Boolean flag is true, ✓ then set font style of btnQ1_4 to bold ✓ else ✓ show a message that the card is invalid ✓ (Allow hard coding to check each character: 1 to 4, 6 to 9, 11 to 14 and 16 to 19)	**15**	
1.4	**BUTTON: [Q1.4 – Proceed to Checkout]** Display Total (global variable) ✓ in the richedit ✓ Formatted to currency, 2 decimal places ✓ With label ✓	**4**	
		38	

QUESTION 2		MAX. MARKS	MARKS ACHIEVED
2.1	**BUTTON: [Q2.1 – Quantities over 5]** tblorder.First ✓ Loop until the end of table ✓ if tblorder['Quantity'] ✓ > 5 ✓ then display product in richedit ✓ tblOrder.next ✓	**6**	
2.2	**BUTTON: [Q2.2 – Change one product]** tblorder.First ✓ Loop until the end of table ✓ if tblorder['Product'] ✓ = 'none' then ✓ tblorder.Edit ✓ tblorder['Product'] ✓ := 'Lenova Yoga 3' ✓ tblorder.Post ✓ tblorder.Next ✓	**9**	
2.3	**BUTTON: [Q2.3 – December orders]** Set total variable to 0 ✓ tblorder.First ✓ Loop until the end of table ✓ if tblorder['OrderDate'] ✓ >=✓ '2018/12/01' ✓ (***OR*** *copy the month ✓from OrderDate✓and check if month = 12 ✓*) then total := total ✓ + tblorder['Quantity'] ✓ tblorder.Next; ✓ reddisplay.Lines.Add(inttostr(isum) ✓+ ' products ordered in December')	**10**	
2.4	**BUTTON: [Q2.4 – Delete customer]** Get customer ID from the combobox ✓ Set counter to 0 ✓ tblorder.First ✓ Loop to end of table ✓ If CustomerID field = chosen customer ID ✓ and Delivery field = 'Normal' ✓ then • Display the OrderID in the richedit ✓ • Add 1 to counter ✓ • Delete ✓ Else ✓ tblorder.next ✓ (end of loop) If counter = 0 then ✓ Display "No records deleted" in the richedit ✓	**13**	
		38	

QUESTION 3		MAX. MARKS	MARKS ACHIEVED
3.1	**SortandDisplay** Procedure heading ✓ Outer loop from 1 to 9 ✓ Inner loop from outer loop counter + 1 to 10 ✓ If arritem[outerloop counter] > ✓ arritem[innerloop counter] then ✓ set temp string to arritem[outerloop] ✓ set arritem[outerloop] = arritem[innerloop] ✓ set arritem[innerloop] to temp string ✓ *do the same for arrqty using a temp integer:* set temp integer to arrqty[outerloop] ✓ set arrqty[outerloop] = arrqty[innerloop] ✓ set arrqty[innerloop] to temp integer✓ loop from 1 to 10 ✓ display in richedit, arritem index ✓ and arrqty index converted to string ✓ in columns ✓	**15**	
3.2	**OnCreate event handler of frmQuestion4** Loop from 1 to 10 ✓ Get string from arritem, store in a string variable ✓ Copy item name from string variable back to arritem ✓ Remove item name from the string variable ✓ Add the remaining quantity in string variable to arrqty ✓ Converted to integer ✓ Added to the number in arrqty ✓ Call procedure SortandDisplay (after loop) ✓	**8**	
3.3	**FUNCTION GetNewQuantity(inum, ipercent : integer) : integer** Function with 2 integer parameters ✓✓ Returning an integer data type ✓ result ✓ := inum - ✓trunc ✓ (inum *ipercent ✓/100 ✓) ***OR*** *result ✓:= inum – ✓(inum *ipercent) ✓div ✓100 ✓)*	**8**	
3.4	**BUTTON: [Q3.4 – Stock Decrease]** Get interest from inputbox statement ✓ loop from 1 to 10 ✓ set arrqty index ✓ equal to the function GetNewQuantity ✓ using arrqty index ✓ and interest value as parameters ✓ Call procedure SortandDisplay ✓	**7**	
		38	

QUESTION 4		MAX MARKS	MARKS ACHIEVED

4	**BUTTON: [Q4 – Analyse sales]**
	
	If 'sales.txt' does not exist ✓ then
	show a message that file is not found ✓
	and exit ✓
	Get input from combobox ✓
	Set total variable to 0 ✓
	
	Assignfile statement ✓
	Reset text file ✓
	While not at the end of the text file ✓
	• Read a line ✓
	• If the line contains the combobox entry ✓ use pos ✓ then
	o Copy customer name ✓use pos and delete ✓
	o Copy item name ✓use pos and delete ✓
	o Copy the quantity convert to integer ✓ use pos and delete ✓
	o Get the unit price ✓convert to integer or real ✓
	o Calculate the <u>cost</u> = unit price x quantity ✓
	o Add cost to the running total ✓
	o Display in richedit: customer name ✓ and <u>cost</u> formatted to currency and two decimal places ✓ using tab spacing ✓
	
	closefile must be used only if the same textfile variable is used to do the following, otherwise a different textfile variable must be used ✓
	
	assignfile statement ✓using combobox entry as file name with .txt added ✓
	
	If text file exists (using combobox entry and .txt added) ✓ then
	append statement ✓
	Else ✓
	rewrite statement ✓
	
	Write a line to text file using writeln ✓
	with today's date formatted to string ✓
	and the <u>total</u> formatted to currency and two decimal places ✓ use # between the date and total ✓
	
	closefile statement ✓
		36	

		36	

SAMPLE SOLUTIONS

QUESTION 1

//38 Marks//

```
implementation
//////////////Question 1.1   6 marks//////////////////////
procedure TQuestion1.btnQ1_1Click(Sender: TObject);
var sname, suser, spass, snewpass : string;
inum, k : integer;
begin
  sname := edtname.Text;
  inum := randomrange(1,1035);
  spass := copy(sname,1,3) + inttostr(inum);
  showmessage('Your password is ' + spass);
end;

//////////////Question 1.2  13 marks//////////////////////
procedure TQuestion1.btnQ1_2Click(Sender: TObject);
// provided code do not change//////
const pencil = 12;
      pen = 25;
      calculator = 154;
var icode, inum, iqty : integer;
     sline : string;
     rtopay : real;
////////////////////////////////////
begin
 iqty := sedqty.value;

 sline := rgpchoice.items[rgpchoice.itemindex];
case rgpchoice.itemindex of
0 :  begin
       rtopay := iqty * pencil;
       rgrandtotal := rgrandtotal + rtopay;
       sline := sline + #9 + floattostrf(rtopay,ffcurrency,8,2);
     end;
1 : begin
       rtopay := iqty * pen;
       rgrandtotal := rgrandtotal + rtopay;
      sline := sline + #9 +  floattostrf(rtopay,ffcurrency,8,2);
    end;
2 : begin
       rtopay := iqty * calculator;
       rgrandtotal := rgrandtotal + rtopay;
      sline := sline + #9 +  floattostrf(rtopay,ffcurrency,8,2);
    end;
  end;
 redinvoice.Lines.Add(sline);

end;
```

```
//////////////Question 1.3   15 marks////////////////////////
procedure TQuestion1.btnQ1_3Click(Sender: TObject);
var scard : string;
  stemp : string;
    k : integer;
    bdigits : boolean;
begin
scard := edtcard.Text;
  for k  := 1 to length(scard) do
        begin
          if scard[k] <> '-' then
             stemp := stemp + scard[k]
        end;
  bdigits := true;
  for k := 1 to length(stemp) do
      begin
        if not(stemp[k] in ['0'..'9']) then
            bdigits := false
        end;
if bdigits = true then
  btnQ1_4.font.style := [fsbold]
   else
  showmessage('Your bank card number is invalid');

// alternative solution:
/// scard := edtcard.text;
///  delete(scard,5,1);
/// delete(scard,9,1);
///  delete(scard,13,1);
///  bdigits := true
///  for k := 1 to 16 do
///  begin
///  if not (scard[k] in ['0'..'9']) then
///  bdigits := false;
///  end
///  if bvalid then
///  btnQ1_4.font.style := [fsbold];
///  else
///  showmessage('The card number is invalid');
end;

//////////////Question 1.4   4 marks////////////////////////
procedure TQuestion1.btnQ1_4Click(Sender: TObject);
begin
  redinvoice.Lines.Add('');
  redinvoice.Lines.Add('Total due = ' + floattostrf(rgrandtotal,ffcurrency,8,2));
end;
```

QUESTION 2

// 38 Marks //

```
////Question 2.1  6 Marks//////////////////////////
procedure TfrmQuestion2.btnQ2_1Click(Sender: TObject);
begin
reddisplay.Clear;
  tblorder.First;
  while not tblorder.eof do
  begin
    if tblorder['Quantity'] > 5 then
       reddisplay.Lines.Add(tblorder['Product']);
     tblorder.Next;
  end;
end;

////Question 2.2  9 Marks//////////////////////////
procedure TfrmQuestion2.btnQ2_2Click(Sender: TObject);

begin
tblorder.First;
   while not tblorder.eof do
      begin
        if tblorder['Product'] = 'none' then
           begin
             tblorder.Edit;
             tblorder['Product'] := 'Lenova Yoga 3';
             tblorder.Post;
            end;
        tblorder.Next;
      end;
end;

////Question 2.3  10 Marks//////////////////////////
procedure TfrmQuestion2.btnQ2_3Click(Sender: TObject);
var isum: integer;
begin
isum := 0;
 tblorder.First;
   while not tblorder.eof  do
      begin
        if tblorder['OrderDate'] >= '2018/12/01' then
           begin
             isum := isum + tblorder['Quantity'];
           end;
        tblorder.Next;
      end;
 reddisplay.Clear;
 reddisplay.Lines.Add(inttostr(isum) + ' products ordered in December')
end;
```

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```
////Question 2.4  13 Marks//////////////////////////
procedure TfrmQuestion2.btnQ2_4Click(Sender: TObject);
var scust : string;
ino : integer;
begin
ino := 0;
  scust := cmbcustomer.Text;
  reddisplay.Clear;
  tblorder.First;
     while not tblorder.eof do
      begin
         if (tblorder['CustomerID'] = scust) and (tblorder['Delivery'] = 'Normal') then
            begin
             reddisplay.Lines.Add(tblorder['OrderID']);
             inc(ino);
             tblorder.Delete;
            end
           else
          tblorder.Next;
       end;

   if ino = 0 then
     reddisplay.Lines.Add('No orders were deleted');

end;
```

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QUESTION 3

```
//// 38 Marks ////
////Question 3.1  15 marks//////////////////
procedure TfrmQuestion3.sortanddisplay;
var k, l, itemp : integer;
stemp : string;
begin
for k := 1 to 9 do
  for l := k + 1 to 10 do
    begin
      if arritem[k] > arritem[l] then
        begin
          stemp := arritem[k];
          arritem[k] := arritem[l];
          arritem[l] := stemp;

          itemp := arrqty[k];
          arrqty[k] := arrqty[l];
          arrqty[l] := itemp;
        end;
    end;
 redoutput.Clear;
for k := 1 to 10 do
     redoutput.Lines.Add(arritem[k] + #9+ inttostr(arrqty[k]));
end;

///Question 3.2   8 marks//////////////////////
procedure TfrmQuestion3.FormCreate(Sender: TObject);
var k : integer;
sline : string;
begin
///Provided code Do not delete/////////////////
redoutput.Paragraph.TabCount := 1;
redoutput.Paragraph.tab[0] := 100;
/// Question 3.2  add code below///
for k := 1 to 10 do
  begin
  sline := arritem[k];
  arritem[k] := copy(sline,1,pos(' ',sline)-1);
  delete(sline,1,pos(' ',sline));
  arrqty[k] := arrqty[k] + strtoint(sline);
  end;
 sortanddisplay;
end;

// Question 3.3   8 marks//////////////////////
function TfrmQuestion3.getnewquantity(inum, iperc: integer): integer;
//var  idiv : integer;
begin
result := inum - trunc(inum *iperc/100);
// or
//idiv := inum *iperc div 100
//result := inum - idiv;end;
```

```
///Question 3.4  7 Marks//////////////////////////
procedure TfrmQuestion3.btnQ3_4Click(Sender: TObject);
var k, inum : integer;
 begin
inum := strtoint(inputbox('Enter the percentage decrease','',''));
for k := 1 to 10 do
   begin
      arrqty[k] := getnewquantity(arrqty[k],inum);
    end;
 sortanddisplay;
end;
```

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QUESTION 4

```
/////////Question 4   36 marks////////////////////////
procedure TfrmQuestion4.btnQ4Click(Sender: TObject);
var tfile : textfile;
   soneline, sname, sitem , sinput: string;
    iqty : integer;
    rprice, rtot, rdue : real;
begin
if not fileexists('sales.txt') then
   begin
     showmessage('File does not exist');
     exit;
   end;
  sinput := cmbitem.text;
 assignfile(tfile,'sales.txt');
 reset(tfile);
 rtot := 0;
 while not eof(tfile) do
     begin
       readln(tfile,soneline);
       if pos(sinput,soneline) > 0 then
       begin
       sname := copy(soneline,1,pos(';',soneline) - 1);
       delete(soneline,1,pos(';',soneline));
       sitem := copy(soneline,1,pos(';',soneline) - 1);
       delete(soneline,1,pos(';',soneline));
       iqty := strtoint(copy(soneline,1,pos(';',soneline) - 1));
       delete(soneline,1,pos(';',soneline));
       rprice:= strtofloat(soneline);
       rdue := rprice * iqty;
       rtot := rtot + rdue;
       reddisplay.Lines.Add(sname + #9 + floattostrf(rdue,ffcurrency,8,2));
       end;
    end;
   closefile(tfile);
  assignfile(tfile, cmbitem.text + '.txt');
  if not fileexists(cmbitem.text + '.txt') then
   begin
     rewrite(tfile);
   end
   else
   begin
     append(tfile);
   end;

 writeln(tfile,datetostr(date) + '#' + floattostrf(rtot, ffcurrency,8,2));
 closefile(tfile);
 end;
```

TOTAL: 150

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