



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

SEPTEMBER 2015

**INFORMATION TECHNOLOGY P1
MEMORANDUM**

MARKS: 150

This memorandum consists of 11 pages.

QUESTION 1: POSSIBLE SOLUTION

```
procedure TForm1.btn1Click(Sender: TObject);
var
  sname,ssurname,rooms : string;
begin
  sname := ledname.text; ✓
  ssurname := ledsurname.text; ✓
  rooms := rgprooms.items[rgprooms.itemindex]; ✓
  lbldisplay.Caption := sname + ' '+ ssurname+' '+rooms; ✓
```

4 marks

```
procedure TForm1.btn2Click(Sender: TObject);
var
  idays : integer;
  rcost : real;
begin
  idays := strtoint(edtnumdays.text); ✓
  if idays <= 5 then ✓
    rcost := idays *250 ✓
  else ✓
    rcost := 5 *250 ✓ + (idays - 5)*96/100*250; ✓
  edtcost.text := floattostrf(rcost ✓,ffcurrency,8,2); ✓
```

8 marks

```
procedure TForm1.btn3Click(Sender: TObject);
var
  iminutes, ihours : integer;
  rcost : real;
begin
  iminutes := strtoint(edtminutes.Text); ✓
  ihours := round ((iminutes/60 ✓)+0.5); ✓
  rcost := ihours * 30; ✓
  lblIntCost.Caption := floattostrf(rcost ✓, ffcurrency,8,2); ✓
```

6 marks

```
procedure TForm1.btn4Click(Sender: TObject);
var
  ichar, k, inum, ilen : integer;
  scode : string;
begin
  ichar := 0; ✓
  inum := 0; ✓
  scode := edtpass.text; ✓
  ilen := length(scode); ✓
  for k := 1 to ilen do ✓
    begin
      if scode[k] in ['*','?','#','%'] then ✓
        inc(ichar); ✓
```

15 marks

```
if (scode[k]) in ['0'..'9'] then ✓  
    inc(inum); ✓  
end;  
if (ilen = 10) ✓ and (ichar >= 3) ✓ and (inum >= 3) ✓ then  
    ShowMessage('Valid Password') ✓  
else ✓  
    ShowMessage('Invalid Password'); ✓  
end;  
procedure TForm1.btnQ5Click(Sender: TObject);  
var  
    itotal, iran, inights, k, l : integer;  
    sstars : string;  
begin  
    randomize;  
    reddisplay.clear; ✓  
    reddisplay.Paragraph.tabcount := 1; ✓  
    reddisplay.Paragraph.tab[0] := 50; ✓  
    reddisplay.Lines.add('Month'+#9+'No of Nights'); ✓  
    itotal := 0; ✓  
    inights := 0; ✓  
  
    for k := 1 to 12 do ✓  
        begin  
            sstars := ""; ✓  
            iran := random(20) + 1; ✓  
            for l := 1 to iran do ✓  
                begin  
                    sstars := sstars + '*'; ✓  
                end;  
            reddisplay.lines.add(inttostr(k) ✓ + #9 + sstars + inttostr(iran)); ✓  
            inights := inights + iran; ✓  
        end;  
        itotal := inights * 450; ✓  
        reddisplay.lines.add("Total No of Nights booked: "+inttostr(inights)); ✓  
        reddisplay.lines.add("Total Income for the year: "+inttostr(itotal)); ✓  
    end;  
end;
```

17 marks

[50]

QUESTION 2: POSSIBLE SOLUTION

unit clstravel_u; 27 marks

Question 2 53 marks

interface

uses sysutils; ✓

type

TTravel = class

private ✓

fbooking : string;

fdest : string; ✓ ✓

fdate : string;

fpeople : integer;

fdiscout : real;

ftotal : real;

public

constructor create(sbooking, sdest, sdate : string; ipeople:integer; rtotal : real); ✓

procedure calcdiscout;

procedure calctotal; ✓

function toString:string; ✓

function getdest : string; ✓

end;

implementation

{ TTravel }

procedure TTravel.calcdiscout; ✓

var

imonth : integer;

rdiscout : real;

begin

imonth := strtoint(copy(fdate,4,2)); ✓

if imonth in [2,5,8,11] then ✓

begin

rdiscout := 5; ✓

if fpeople >= 15 then ✓

rdiscout := 7.5; ✓

end

else ✓

if fpeople >= 15 then ✓

rdiscout := 2.5 ✓

else

rdiscout := 0; ✓

fdiscout := rdiscout/100*ftotal ✓;

end;

```
procedure TTravel.calctotal;
begin
  ftotal := ftotal - fdiscount; ✓
end;

constructor TTravel.create(sbooking: string; sdest, sdate: string;
  ipeople: integer; rtotal: real);
begin
  fbooking := sbooking;
  fdest := sdest;
  fdate := sdate;
  fpeople := iperson; ✓
  ftotal := rtotal;
  fdiscount := 0; ✓
end;

function TTravel.getdest : string;
begin
  result := fdest; ✓
end;

function TTravel.toString: string;
begin
  result := 'Booking Nr: '✓ + fbooking + #13✓ + 'Destination: ' + fdest+#13+'Date: '
    +fdate+#13+'Number of people: '+inttostr(fpeople)+#13+'Discount:
    '+floattostrf(fdiscount,ffcurrency,8,2)+
    #13+ 'Total: '+floattostrf(ftotal,ffcurrency,8,2)+#10;
end;
  ✓fields          ✓currency

end.
```

unit question2_u; 26 marks

interface

uses

Windows, Messages, SysUtils, Variants, Classes, Graphics, Controls, Forms,
Dialogs, StdCtrls, clstravel_u✓, ComCtrls;

type

TForm1 = class(TForm)
 btn2_1: TButton;
 redOutput: TRichEdit;
 cboinput: TComboBox;
 procedure btn2_1Click(Sender: TObject);

private

 {Private declarations}

public

 {Public declarations}

end;

var

Form1: TForm1;
Travel : TTravel; ✓

implementation

{ \$R *.dfm }

procedure TForm1.btn2_1Click(Sender: TObject);

var

myfile, myfile1 : textfile;
soneline,sinput, sbooking,sdest,sdate : string;
ipos,ipeople : integer;
rtotal : real;

begin

 if fileexists('Destination.txt')<>true then ✓

 begin

 Showmessage('File does not exist'); ✓

 Exit; ✓

 end;

 Assignfile(myfile,'Destination.txt'); ✓

 Reset(myfile); ✓

 sinput := cboinput.text; ✓

 while not eof(myfile) do ✓

 begin

 readln(myfile,soneline); ✓

 ipos := pos(';',soneline);

 sbooking := copy(soneline,1,ipos-1); ✓

 delete(soneline,1,ipos);

```
ipos := pos(';',soneline);  
sdest := copy(soneline,1,ipos-1); ✓  
delete(soneline,1,ipos);
```

```
ipos := pos(';',soneline);  
sdate := copy(soneline,1,ipos-1); ✓  
delete(soneline,1,ipos);
```

```
ipos := pos(';',soneline);  
ipeople := strtoint(copy(soneline,1,ipos-1)); ✓  
delete(soneline,1,ipos);
```

```
rtotal := strtofloat(soneline); ✓  
travel := TTravel.create✓ (sbooking,sdest,sdate,ipeople,rtotal✓); ✓ correct order  
travel.calcdiscout; ✓  
travel.calctotal; ✓  
if sinput = 'ALL' then ✓  
    redoutput.lines.add(travel.tostring) ✓  
    else ✓  
        if travel.getdest = sinput then ✓  
            redoutput.lines.add(travel.tostring); ✓  
    end;  
closefile(myfile); ✓
```

```
end;
```

```
end.
```

QUESTION 3: POSSIBLE SOLUTION

unit Question3_u;

Question 3: 47 marks

interface

uses

Windows, Messages, SysUtils, Variants, Classes, Graphics, Controls, Forms,
Dialogs, Grids, StdCtrls, ExtCtrls, ComCtrls, Buttons;

type

```
TForm1 = class(TForm)
  Button1: TButton;
  Edit1: TEdit;
  Label1: TLabel;
  StringGrid1: TStringGrid;
  Button2: TButton;
  RadioGroup1: TRadioGroup;
  redDisplay: TRichEdit;
  BitBtn1: TBitBtn;
  procedure Button1Click(Sender: TObject);
  procedure Button2Click(Sender: TObject);
  procedure FormCreate(Sender: TObject);
private
  {Private declarations}
public
  procedure changeDate(irowf : integer);
  procedure Display;
  {Public declarations}
end;
```

var

```
Form1: TForm1;
irfound : integer;
ar2flights : array[1..26,1..4] of string =
(('John','09/09/2015','JHB','CPT'),('Sarah','12/11/2015','ELS','JHB'),('Pete','10/01/2015','JHB','CPT'),('Lorna','19/11/2015','DBN','JHB'),('Maxwell','12/11/2015','ELS','DBN'),('Muzi','10/01/2015','JHB','CPT'),('Mavis','19/11/2015','DBN','JHB'),('Michal','12/11/2015','ELS','DBN'),('Rahul','10/01/2015','JHB','CPT'),('Vuyisa','19/11/2015','DBN','JHB'),('Masande','12/11/2015','ELS','DBN'),('Beena','10/01/2015','JHB','CPT'),('Lungile','19/11/2015','DBN','JHB'),('Kazimla','12/11/2015','ELS','DBN'),('Alupheli','10/01/2015','JHB','CPT'),('Ellen','19/11/2015','DBN','JHB'),('Mbongovuyo','12/11/2015','ELS','DBN'),('Sibulele','10/01/2015','JHB','CPT'),('Esihle','19/11/2015','DBN','JHB'),('Ronney','12/11/2015','ELS','DBN'),('Lulutho','10/01/2015','JHB','CPT'),('Naledi','19/11/2015','DBN','JHB'),('Justine','12/11/2015','ELS','DBN'),('Grace','10/01/2015','JHB','CPT'),('Athi','19/11/2015','DBN','JHB'),('Sinegugu','12/11/2015','ELS','DBN'));
```

arrseats : array[1..6] of char = ('A','B','C','D','E','F');
implementation

```
{ $R *.dfm }
//=====
procedure TForm1.Button1Click(Sender: TObject);
var
  bfound : boolean;
  sname : string;
  irow,irowfound : integer;

begin
  bfound := false; ✓
  sname := edit1.text; ✓
  for irow := 1 to 26 do ✓
    begin
      if ar2flights[irow,1] = sname then ✓
        begin
          bfound := true; ✓
          irowfound := irow; ✓
          irfound:=irow; ✓
        end;
      end;
    if bfound = true then ✓
      begin
        Showmessage(sname+' has been found'); ✓
        Display; ✓ //Call the procedure Display
        ChangeDate(irowfound); ✓//Call the procedure ChangeDate()
      end;
    else
      Showmessage(sname+' has not been found'); ✓
    end;
  //=====

procedure TForm1.changeDate(irowf : integer); ✓
var
  sdate : string;
begin
  sdate := inputbox('Enter Date',''); ✓
  ar2flights[irowf,2]:= sdate; ✓
  Showmessage('Date successfully changed'); ✓

end;
//=====
procedure TForm1.Display; ✓
  irow, icol : integer;
begin
  stringgrid1.cells[0,0]:='Name'; ✓
```

```

stringgrid1.cells[1,0]:='Date';
stringgrid1.cells[2,0]:='From';
stringgrid1.cells[3,0]:='To';
for irow := 1 to 26 do ✓
  for icol := 1 to 4 do ✓
    stringgrid1.cells[icol-1,irow] ✓ := ar2flights[irow,icol]; ✓
end;
//=====
procedure TForm1.Button2Click(Sender: TObject);
var
  iseatrow,iseat ,irow: integer;
  cseat : char;
  sseatnr, sFilename,sName : string;
  tFile:Textfile;
begin
  redDisplay.clear;
  if radiogroup1.itemindex = 0 then ✓
  begin
    iseatrow:= random(6) + 1; ✓
    repeat ✓
      iseat := random(6) + 1; ✓
    until (iseat <> 2) and (iseat <> 5); ✓
    cseat := arrseats[iseat]; ✓
    sseatnr := inttostr(iseatrow)+cseat; ✓
  end

  else ✓
  if radiogroup1.itemindex = 1 then ✓
  begin
    iseatrow:= random(24) + 7; ✓
    iseat := random(6) + 1; ✓
    sseatnr := inttostr(iseatrow) + arrseats[iseat]; ✓
  end;
  sName:=ar2flights[irfound,1]; ✓
  redDisplay.Lines.Add('Name : ' + sName);
  redDisplay.Lines.Add('Date : ' + ar2flights[irfound,2]);
  redDisplay.Lines.Add('From : ' + ar2flights[irfound,3]);
  redDisplay.Lines.Add('To : ' + ar2flights[irfound,4]);
  redDisplay.Lines.Add('Seat : ' + sseatnr);

  sFileName:=sName+'.txt'; ✓
  assignfile(tFile,sFileName); ✓
  rewrite(tFile); ✓
  writeln(tFile,'Name : ' + sName);
  writeln(tFile,'Date : ' + ar2flights[irfound,2]);
  writeln(tFile,'From : ' + ar2flights[irfound,3]);
  writeln(tFile,'To : ' + ar2flights[irfound,4]);
  writeln(tFile,'Seat : ' + sseatnr);
  closefile(tFile); ✓
  redDisplay.Lines.Add('****File '+sName+'.txt successfully saved****'); ✓
end;

```

```
//=====
procedure TForm1.FormCreate(Sender: TObject);
begin
  Display; ✓ //Call the procedure
end;
//=====
end.
```

TOTAL: 150