

POSSIBLE ANSWERS FOR / MOONTLIKE ANTWOORDE VIR :

**COMPUTER STUDIES HG
REKANAARSTUDIE HG**

**PAPER 1
VRAESTEL 1**

724-1/1

Question 1

```

Program Essay;
Uses Crt;
Type
  Str15 = String[15]; ✓
Var
  TextFile    : Text; ✓
  Oneline     : String;
  Counter, P: Byte;
  Word        : Str15 ;
  Ans         : char;

Function Newword(FWord: Str15):Str15;
Var
  K : Integer;
Begin
  For K := 1 to Length(FWord) do ✓
    FWord[K] ✓ := Upcase(FWord[K]); ✓
  NewWord := FWord; ✓
End;

Begin
  ClrScr;
  Assign(Textfile, 'ESSAY.TXT'); ✓
  Writeln('Do you want to test a word? Y/N');
  Readln(Ans);
  While Upcase(Ans) = 'Y' do ✓
  Begin
    Writeln('Which word do you want to test');
    Readln(Word);
    Word := Newword(Word); ✓
    Word := ' ' + Word;
    Reset(TextFile); ✓
    Counter := 0; ✓
    While not EOF(TextFile) do ✓
    Begin
      Readln(TextFile, Oneline); ✓
      Oneline := ' ' + Oneline + ' '; ✓
      P := Pos(Word, Oneline); ✓
      While P <> 0 do ✓
      Begin
        If NOT(Oneline[P + Length(Word)] in ['A'..'Z']) ✓
          Then Inc(Counter); ✓
        Delete(Oneline, 1, P + Length(Word)); ✓
        P := Pos(Word, Oneline) ✓
      End;
    End;
    Writeln('The word: ', Word, ' appears ', Counter, ' times in the essay'); ✓
    Readkey;
    Writeln('Do you want to test another word? Y/N'); ✓
    Readln(Ans)
  End;
End.

```

[23]

Question 3

Program Waiters;

Uses Crt; ✓

Type

Choices = Set of Byte; ✓

Var

Choice : Choices;

Boys : Text;

Number, K, HowMany : Byte; ✓ ✓

Name : String[15];

Begin

ClrScr; ✓

HowMany:=0; ✓

Randomize; ✓

Assign(Boys, 'BOYS.TXT'); ✓ ✓

Reset(Boys); ✓

While Not EOF(Boys) do ✓

Begin

Inc(HowMany); ✓

Readln(Boys, Name); ✓

End;

Writeln('Names of ten boys'); ✓

Choice := []; ✓

For K := 1 to 10 do ✓

Begin

Repeat ✓

Number := Random(HowMany) + 1; ✓ ✓

Until Not (Number in Choice); ✓

Choice := Choice + [Number]; ✓

End;

K := 0;

Reset(Boys);

While Not EOF(Boys) do

Begin

Inc(K);

Readln(Boys, Name);

If K in Choice then ✓ ✓ ✓

Writeln(Name)

End;

Close(Boys); ✓

Readkey ✓

End.

[25]

VRAAG 1

Veranderlikes/Type

2

Funksie

4

Assign

1

While lus

2

Reset binne lus

1

Teller inisialiseer in lus

1

Funksieroep

1

Lees uit txtlr

2

Tel voorkoms van woord

8

Afvoer regte plek in lus

1

Totaal

23

```
{-----}
{ M E M O : Vraag 1      Oktober 2003 }
{-----}
uses crt;

type str15 = string[15]; ✓

{-----}
Function NuweWoord (woord : str15) : str15;

var k      : byte;

begin
  for k := 1 to LENGTH (woord) do ✓
    woord[k] ✓ := UPCASE (woord[k]); ✓
  NuweWoord := woord; ✓
end;

{===== H O O F P R O G R A M =====}

var tlr      : text; ✓
    lyn      : string;
    woord    : str15;
    tel, L, p : byte;
    Iswoord  : boolean ;

begin
  Assign (tlr, 'essay.txt'); ✓
  Clrscr;
  write ('Woord wat getel moet word : [0 stop] ');
  readln (woord);
  while woord <> '0' do ✓
    begin
      RESET (tlr); ✓

      tel := 0; ✓

      woord := NuweWoord (woord); ✓
      L := LENGTH (woord);

      while not EOF (tlr) do ✓
        begin
          readln (tlr, lyn); ✓
```

4

2

```

{-----}
lyn := ' ' + lyn + ' ' ; ✓
p := POS (woord, lyn); ✓
while p <> 0 do ✓
begin
  iswoord := NOT(lyn[p-1] in ['A'..'Z'])
    and NOT(lyn[p+1] in ['A'..'Z']); ✓✓
  if iswoord then INC (tel); ✓

  DELETE (lyn, p, L); ✓
  p := POS (woord, lyn); ✓
end ;
{-----}
end (while);
close (tlr);

```

8

```

writeln ('Die woord "', woord, '" kom ', tel, ' keer in
die opstel voor'); ✓

writeln ;
write ('Volgende woord [0 stop] : ');
readln (woord); ✓
end ;
end.

```

```

{-----Onttrek word uit sin en toets-----}

```

```

lyn := ' ' + lyn + ' ' ; ✓
for k := 1 to LENGTH(lyn)-1 do ✓
begin
  if NOT(lyn[k] in ['A'..'Z']) and ✓
    (lyn[k+1] in ['A'..'Z']) ✓
  then Start := k+1 ✓
  else
    if (lyn[k] in ['A'..'Z']) and
      NOT(lyn[k+1] in ['A'..'Z']) ✓
    then begin
      toets := COPY(lyn, Start, k-start+1); ✓
      if toets = woord
      then INC (tel); ✓
    end ;
  end ;
end ;

```

8

```

{-----Stel woord saam en toets-----}

lyn := lyn + ' ' ; ✓
toets := ''; ✓
for k := 1 to LENGTH(lyn)-1 do ✓
begin
  if (lyn[k] in ['A'..'Z']) ✓
  then toets := toets + lyn[k] ✓
  else begin
    If toets = woord ✓
    then INC (tel); ✓
    toets := ''; ✓
  end
end ;

```

8

UIT OPSTEL.TXT

Die woord "MEVROU" kom 9 keer in die opstel voor
 Die woord "VROU" kom 1 keer in die opstel voor
 Die woord "S-" kom 5 keer in die opstel voor
 Die woord "NIE" kom 15 keer in die opstel voor
 Die woord "DIE" kom 4 keer in die opstel voor
 Die woord "MAAR" kom 2 keer in die opstel voor

UIT ESSAY.TXT

Die woord "YOU" kom 4 keer in die opstel voor
 Die woord "YOUR" kom 2 keer in die opstel voor
 Die woord "SAID" kom 1 keer in die opstel voor
 Die woord "SHE" kom 1 keer in die opstel voor
 Die woord "HE" kom 1 keer in die opstel voor
 Die woord "THE" kom 5 keer in die opstel voor
 Die woord "IT" kom 0 keer in die opstel voor

Vraag 2

Skikking type/var, data/r

Menu

Repeat

Case

Fouthantering

Assign

Close

Druk

Reset

Opskrif

Lees dat/r

Afvoer

Berekentotale

Parameteroordrag

Reset

Indeks

Lees dat/r

Stoor in skik

Kry totaal

Druk Merietelys

Parameter en gebruik

Temp reg verklaar

Sort

Opskrif

Afvoer

Totaal

Naamlys met punte:

Naam	Wiskunde	Wetenskap	Biologie
Danie Steyn	78	80	0
Kabelo Tuto	90	89	88
James Chang	95	0	86
Keith Maupa	95	68	0
Jan de Wet	89	0	100
Benji Rossman	90	86	82
Sannie Smit	92	92	91

4

3

2

2

2

1

1

8

1

1

3

3

15

3

1

2

2

2

5

14

2

1

7

1

3

52

```
{-----}
{ M E M O : Vraag 2           Oktober 2003 }
{-----}
```

uses crt;

type info

= record

naam : string[20];

wisk, wet, biol : integer;

end;

infosk

= record

naam : string[20];

tot : word;

end ;

skikt

= array[1..50] of infosk; ✓

var skik

: skikt; ✓✓ (of 2 skikkings)

tel

: byte;

lr

: file of info; ✓

rek

: info;

4

```
{-----}
procedure DRUK;
```

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begin

assign (lr, 'punte.dat');

reset (lr); ✓

clrscr;

writeln ('Naamlys met punte: '); ✓

writeln ('-----');

writeln ('Naam', '':16, 'Wiskunde Wetenskap Biologie');

8

while not eof (lr) do ✓

begin

✓read (lr, rek); ✓

with rek do ✓

writeln (naam, '':20-LENGTH(naam) ✓, wisk:12, wet:12,

biol:12); ✓

end;

write ('Druk <ENTER> om voort te gaan');

readkey;

close (lr);

end ;

```
{-----}
```

```

procedure TOTALE(var skik : skikt ✓; var tel : byte ✓);
var lr      : file of info;
rek        : info;
begin
  assign (lr, 'punte.dat');
  reset (lr); ✓
  tel := 0; ✓
  while not eof (lr) do ✓
  begin
    read (lr, rek); ✓
    INC (tel); ✓
    skik[tel].naam := rek.naam; ✓
    if rek.biol > rek.wet ✓
    then skik[tel] ✓.tot := rek.wisk ✓ + rek.boil ✓
    else skik[tel].tot := rek.wisk + rek.wet; ✓
  end ;
  close (lr);
end ;
{-----}
procedure MERIETELYS(skik : skikt; tel : byte ✓);
var temp      : infosk; ✓
k, j          : byte;
begin
  for k := 1 to tel ✓- 1 do ✓
  for j := k to tel do ✓
  begin
    if skik[j].tot > skik[k].tot ✓ then
    begin
      temp      := skik[k]; ✓
      skik[k]   := skik[j]; ✓
      skik[j]   := temp; ✓
    end;
  end;
  clrscr;

```

15

14

	Naam	Totaal
1.	Jan de Wet	189
2.	Sannie Smit	184
3.	James Chang	181
4.	Kabelo Tuto	179
5.	Benji Rossman	176
6.	Keith Maupa	163
7.	Danie Steyn	158

```

writeln ('':5, 'Naam Totaal'); ✓
for k := 1 to tel do ✓
begin
  write (k ✓, '. ', skik[k].naam);
  writeln ('':20-LENGTH(skik[k].naam), skik[k].tot:10 ✓);
end;
write ('Druk <ENTER> om voort te gaan');
readln ;
end;
{===== H O O F P R O G R A M =====}
var keuse : char;
begin
  {assign waar gebruik} ✓
  repeat ✓
  clrscr;
  window (20,10,80,25); ✓
  writeln (' Wetenskapprys');
  writeln ;
  writeln ('1. Vertoon inhoud van leer ');
  writeln ('2. Bepaal totale van leerders'); ✓
  writeln ('3. Druk merietelys');
  writeln ('4. Sluit af');
  writeln ( 'Jou keuse: ');
  readln (keuse); ✓
  writeln ;
  window (1,1,80,25);

```

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```

case keuse ✓ of
'1' ✓: DRUK;
'2' : TOTALE(skik, tel);
'3' : MERIETELYS(skik, tel);
'4' : ;
else writeln ('Foutiewe keuse'); ✓
end {case};
until keuse = '4' ✓
{close waar gebruik} ✓
end.

```

Vraag 3

```

Uses crt
Veranderlikes
Assign
Reset
In skikking
Clrscr
Opskrif
Druk 10 name
RANDOMIZE
Kry nom met Random
For lus
Sonder dubbels
Afvoer
Close

```

```

Totaal
-----
25
-----

```

```

{-----}
{ M E M O : Vraag 3 Oktober 2003 }
{-----}
uses crt;

```

```

var tlr      : text;
seuns       : array [1..20] of string;
tel,k, nom  : byte;

```

```

begin
  assign (tlr, 'SEUNS.TXT');
  reset (tlr);

```

```

  tel := 0;
  while not eof (tlr) do
  begin
    INC (tel);
    readln (tlr, seuns[tel]);
  end ;

```

6

```

clrscr;
writeln ('Kelners vir Matriekafskied');
writeln ('=====');

RANDOMIZE;
for k := 1 to 10 do
begin
  nom := RANDOM (tel) + 1;
  while seuns[nom] = '*' do
    nom := RANDOM (tel) + 1;
  writeln (k:2, ' . ', seuns[nom]);
  seuns[nom] := '*';
end ;
writeln ('Druk <ENTER> om voort te gaan');
readln;
close (tlr);
END .

```

10

```

{-----Stoor nommers in versameling-----}
var nommers : Set of byte;

```

```

nommers := [];
for k := 1 to 10 do
begin
  nom := RANDOM (tel) + 1;
  while nom in nommers do
    nom := RANDOM (tel) + 1;
  nommers := nommers + [nom];
end ;
for k := 1 to tel do
  if k in nommers
  then writeln(seuns[k]);

```

10

```

{-----Kry nommer, druk, en verwyder dan uit skikking-----}
RANDOMIZE;

```

```

for k := 1 to 10 do
begin
  nom := RANDOM (tel) + 1;
  writeln (k:2, ' . ', seuns[nom]);
  for j := nom to tel-1 do
    seuns[j] := seuns[j+1];
  DEC (tel);
end ;

```

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POSSIBLE ANSWERS FOR :
COMPUTER STUDIES HG
PAPER 2

724-1/2

QUESTION 1

1.1

	Y'	Y'	Y	Y	
	00	01	11	10	
W'					X'
00	1			1	
W'					X
01				1	
W					X
11	1	1	1	1	
W					X'
10	1			1	
	Z'	Z	Z	Z'	

Grouping ✓

$$F(W,X,Y,Z) = X'Z' \checkmark + WX \checkmark + YZ' \checkmark \quad (4)$$

$$1.2.1 \quad F(A,B,C) = A'BC' + A'BC + ABC' + ABC \checkmark \quad (1)$$

$$\begin{aligned}
 1.2.2 \quad &= A'B(C' + C) + AB(C' + C) \checkmark \\
 &= A'B + AB \checkmark \\
 &= B(A' + A) = B \checkmark \quad (3)
 \end{aligned}$$

$$\begin{aligned}
 1.3 \quad F(x,y,z) &= x'y(z + z') + z(x + x') \checkmark \\
 &= x'yz + x'yz' + xz(y+y') + x'z(y+y') \checkmark \\
 &= x'yz + x'yz' + xyz + xy'z + x'yz + x'y'z \checkmark \\
 &= m_3 + m_2 + m_7 + m_5 + m_1 \checkmark \quad (4) \\
 &= m_1 + m_2 + m_3 + m_5 + m_7
 \end{aligned}$$

$$\begin{aligned}
 1.4.1 \quad S(X,Y) &= X'Y + XY' \checkmark / X'Y + X'X \\
 C(X,Y) &= XY \checkmark \quad (2) / \text{Error} / X.X (X)
 \end{aligned}$$

$$1.4.2 \quad \text{Half-adder} \checkmark \quad (1) / \text{No adder} / \text{Error}$$

[15]

QUESTION 2

2.1.1 Virtual memory ✓ (1)

2.1.2 CPU ✓ (1)

2.1.3 Contains data and instructions with the most probable chance to be needed by the CPU ✓ ✓ (2) OR Any 2 facts

High speed memory

It causes faster communication between the processor and the motherboard.

Uses transistors instead of capacitor / Does not need to be continually refreshed

Static RAM

2.1.4 CPU ✓ (1)

- 2.1.5 Virtual memory uses hard disk space ✓ to allow the operating system to fool the computer and the user ✓ into thinking more memory is available than what the computer possesses physically. (2)
- 2.1.6 a) SDRAM – this technique uses a clock to synchronize the memory with the CPU . ✓ (1)
b) DDR DRAM – type of memory that doubles the clock speed. ✓ (1)
- 2.2.1 Pipeline processing is a method of processing whereby the processor can read new instructions ✓ from memory prior to the instruction being processed has been completely processed. ✓ ✓ OR
The processing of instructions is divided into steps. At each stage an instruction is only partly processed and instructions are at any moment in different phases of completion.
- Problems when the program uses a decision making structure / A pipeline can stall ✓
Data dependencies ✓ (5)
- 2.2.2 Address bus ✓ , data bus ✓ and control bus ✓ .(3)
- 2.2.3 AGP introduces a dedicated point-to-point channel so that the controller can directly access ✓ ✓ main memory (2)
- 2.2.4 Serial port specification ✓ / Universal Serial Bus
Link up to 127 appliances to one port ✓ / Daisy chaining
Appliances are truly “plug ‘n play” ✓ Any 3 reasons (3)
Appliances are also “hot swappable”
- 2.2.5 ISA-slots has a bit width of 8 – 16 ✓
Slow speed ✓ Any 2 reasons. (2)
No bus controller
Old technology
Speed that data is transferred is slower than the CPU processes
- 2.3.1 An instruction set is the specific group of instructions ✓ that a particular processor(computer) can recognise and execute ✓ (2).
OR RISC ✓ and CISC ✓
- 2.3.2 RISC ✓ and CISC ✓ .(2) OR MMX / SSE2
- 2.4.1 SIMD – technique to execute one instruction ✓ on a lot of data. ✓
OR Single Instruction Multiple Data
- 2.4.2 3D Now! AMD has added instructions to their processors ✓ that improve operation in presentation to the 3D graphics environment.
✓ (4)
- 2.5 IDE – can connect 2 (4) devices / interface for hard disks, CD ROM, CD R, CD RW & DVD. ✓

SCSI – an interface for up to 7 ✓ / SCSI-appliances, including hard disks, CD, CD R, CD RW, DVD. Scanner (much more than IDE). ✓(3)
[35]

QUESTION 3

- 3.1.1 It gives the processor the command to leave that with which it is busy at present✓ and to do first something else✓. (2)
- 3.1.2 Assigns each program the memory it requires;
Monitors the contents of memory
Clears items out of memory when they are no longer in use
Any 2✓ ✓ (2)
- 3.1.3 The management of files ✓ in the secondary memory / floppy disks / tapes / hard disk. ✓ (2) OR Example
- 3.1.4 It keeps record of the status of all the sectors on the disk. ✓ (1)
- 3.1.5 User friendly, mouse, icons, Windows. Any 2 ✓ ✓ (2)
- 3.1.6 A buffer is a temporary storage area ✓ usually in primary memory where items are placed while waiting to be transferred to an output device ✓ (2) / small amount of data
- 3.2 It tests whether (all) the components function ✓ ✓ (2).
- 3.3 Single task – only one program upon a time can be executed. ✓
Multi task – is a processing technique where it appears ✓ that the operating system executes more than one program at the same time.
✓ (3)
- 3.4 A compiler translates a source (program) ✓ (written in a high level language) completely to an object program in machine code ✓ .(2)
- 3.5 It means the code is available to a lot of users to study. Because such a lot of experts can help to identify weaknesses, it is clear that the product will improve.
Cheap / Free / Can be downloaded from the Internet
Can change code ✓ ✓ (2)

[20]

QUESTION 4

- 4.1.1 Computer/ terminal/ main frame computer/ printer Any 2 ✓ ✓ (2)
- 4.1.2 Network is slow Any 2 ✓ ✓ (2)
Errors/problems in network
More clashes occurs
Attenuation
Data may be lost
- 4.1.3 Regenerate ✓
and amplifies signals ✓
Handles network management tasks ✓
Intelligent path selection. ✓ (4)
- 4.1.4 Communication in both directions simultaneously ✓ (1)
- 4.1.5 CSMA/CD ✓ (1)

- 4.2.1 Uses cell switching ✓
 Packets ✓ sent are all the same size ✓ (3)
 Size of packets bytes
- 4.2.2 Especially suitable for video ✓ and sound transmission. ✓ (2)
- 4.3.1 Fibre optic cables ✓ (1)
- 4.3.2 Ring or star ✓ (1)
- 4.3.3 Token passing forwarding access method ✓ (1)
- 4.3.4 It has a good built in error control function.
 It has a high bandwidth of 100 Mbps and is especially suitable for video and multimedia signals.
 It is not susceptible to EMI.
 Eavesdropping is difficult on transmission via fibre optic cables.
 Data-transfer can occur over very long distances. *Any 3* ✓ ✓ ✓ (3)
- 4.4.1 The router issues the logical address when it divides the network in segments. It refers to the whole network segment. ✓ (1)
- 4.4.2 A physical address is the hardware address or the actual number ✓ of a node on the network. (1)
- 4.4.3 A router determines the best road to the segment a signal is sent. ✓
 Supplies more security ✓
 Used to link a LAN to a WAN. ✓
 A router link networks that does not use the same media, topology or communication method.
Any 3 (3)
- 4.5.1 Messages are divided into smaller ✓ units prior to being sent.
 These units are known as packets ✓ and do not necessarily travel by the same route ✓. As soon as all the packets have arrived at the destination, they are linked together. ✓ (4)
- 4.5.2 Main difference is that with packet switching the packet is limited to a certain length ✓ (1)
- 4.5.3 X.25 ✓
 Frame Relay ✓ (2)
- 4.6 Protocol ✓ for wireless communication ✓ (2)

[35]

QUESTION 5

- 5.1.1 Bank via the Internet ✓ (1)
- 5.1.2 Can do banking any time of the day or night. ✓
 Much more convenient because one does not have to go to the bank. ✓
 More secure *Any TWO advantages* (2)
- 5.2.1 To convince people to visit the website.

- To convince people to buy. Many people visits a website, but they are hesitant to buy.
- Hackers and Crackers *Any 2 reasons* ✓ ✓ (2)
- 5.2.2 No need to rent a building/ Cost saving.
Any time of the day or night transactions can happen.
Not restricted to an area. People across the world can visit the website.
More people have access to the website. *Any 3* ✓ ✓ ✓ (3)
- 5.3.1 Many more people ✓ ✓ are connected to the Internet (2) OR
Many more transactions are being done on the Internet
OR The number computer criminals increase.
- 5.3.2 Right of users (passwords) Digital signature
Encryption Digital certificate
Firewalls *Any 3* ✓ ✓ ✓ (3)
- 5.4 Wireless access access to the Internet ✓ (1) Cell phones with access to the Internet
- 5.5 Good service *Any 2* ✓ ✓
Affordable products
Quality products
Be familiar with the latest technology (2)
- 5.6 Small handheld computers that can fit into one's hand. ✓ (1) / Digital diary
- 5.7.1 Internet Protocol ✓ (1)
- 5.7.2 Every single machine on the Internet has a unique address called its Internet number / network number. ✓ (1)
- 5.7.3 A. 213.25.61.132 ✓ (1)

[20]

QUESTION 6

- 6.1.1 Gotoxy ✓ Textcolor /textbackground / Header e.g. writeln(' ')
window ✓ (2) Highvideo
- 6.1.2 Validation is to test if data is valid. ✓ (1)
- 6.1.3 Grade ✓ / Class ✓ (2)
- 6.1.4 A compiler directive is a command to the compiler which will change the way in which your program is compiled. ✓ (1)
OR a compiler directive switch the errorhandling on or off
OR an example with explaining
- 6.2 Ease the debugging of programs *Any two* ✓ ✓ (2)
Standard algorithms used can be called from the program.
Programs are more structured.

- 6.3 Any two of: ✓ ✓ System analysis / System design / System implementation / System installation / System test (2)

[10]

QUESTION 7

7.1 TYPE

```

arr= array[1..20] of integer; ✓
VAR
  numbers :arr; ✓
  quantity, num :integer; ✓ (3)

```

- 7.2 Value parameters serves as input ✓ to the procedure, namely iquantity, inum ✓. Reference parameters serves as output of the main program.

✓
/ has a VAR in front of it / two direction communication for example inumbers ✓ (4)

- 7.3 If the number is added at the end. ✓
While (inumbers[j] <= inum) AND (j <= iquantity) DO ✓ (2)

- 7.4 No it will not function correctly. ✓. One value is assigned to a lot of elements (explanation ✓) (2)

- 7.5 A function sends only one variable. ✓ back through the function name. A procedure sends no, one or many via reference parameters back. ✓
The function call statement is always part of a statement, ✓ while a procedure's call statement is a statement on it's own. ✓ (4)

[15]

QUESTION 8

8.1.1 ler ✓ (1)

8.1.2 theperson ✓ (1)

8.1.3 CLIENT.DAT ✓ (1)

8.2.1 Open an existing file ✓ (1)

8.2.2 Link the filename in the primary memory to a filename in the secondary memory. ✓ (1)

```

8.3 while not eof(ler) do ✓
begin
  read(ler,theperson); ✓
  position := pos('mweb',theperson.email); ✓
  if position > 0 ✓ then writeln(theperson.name, '
',theperson.surname'); ✓ (5)
end;
close(ler);

```

QUESTION 9

- 9.1 2 3 ✓ on a new line ✓
3 4 ✓
4 5 ✓ (4)

- 9.2 Monday
 Tuesday
 Wednesday ✓ ✓
 Thursday
 Friday
 5 ✓ (3)
- 9.3 Computer studies gr1 ✓ / Computer studies gr12HG
 e ✓
 Cor studies gr1 ✓ (3) / Cor studies gr12HG

[10]**QUESTION 10**

- 10.1 The sub range ['1'..'12'] must be of the ordinal type '12' is incorrect because it consists of more than one character. ✓
- 10.2 Person is a type and not a variable. ✓
 It has to be copy(theperson.name,1,1)
- 10.3 Uppercase works only with data type CHAR. ✓
 The semicolon in front of else must be removed. ✓
- 10.4 Must be **NOT** (choice in [1..31]) ✓
- 10.5 Change to :while (answ <> 'Y') **AND** (answ ✓ <> 'y') do
 Brackets ✓
- 10.6 Account number is of BYTE. Must be a string variable. ✓
- 10.7 TEXT.TXT must be in inverted commas. ✓
 Cannot use inc with data type REAL. ✓
 Readln(text,) ✓
- 10.8 accarr[k].surname ✓
- 10.9 Ant is of char. Copy is a string variable. ✓
 := must be = . ✓
- 10.10 A BEGIN and an END are missing. ✓
 OR writeln(' ..',theperson.surname) (15)

[15]**QUESTION 11**

```

program exam;
uses crt;
var
  number: string[10];
  k,j ,code, howmany :integer; ✓ {all variables declared correctly}

begin

```

```

repeat ✓
clrscr;
writeln('Key in the number');
readln(number); ✓
if number <> '0' then ✓
begin
    val(number,howmany,code); ✓
    if code = 0 then ✓
    begin
        for k := 1 to length(number) do ✓
        begin
            val(number[k],howmany,code); ✓ ✓
            write(howmany:2, ' '); ✓
            for j := 1 to howmany do ✓
                write('*'); ✓
            writeln; ✓
        end {end For}
    end {end if}
    else
        writeln('Number contains characters'); ✓

        writeln('PRESS <ENTER> TO CONTINUE');
        readln;
    end; {end if}
until number = '0'; ✓
readln;
end. (15)

```

Repeat – until	2
Read number	1
Check for characters & message	3
Stop number 0	1
Print stars	7
Variables declared correct	1

[15]

OR

```

program eksamen;
uses crt;
var
    number: longint;
    numberstring :string[20]; ✓
    k,j ,code, howmany :integer;

```

Repeat – until	2
Read number	1
Check for characters & message	3
Stop number 0	1
Print stars	7
Variables declared correct	1

```

begin
    repeat ✓
    clrscr;
    {$I-} ✓
    writeln('Key in the number');
    readln(number); ✓
    {$I+}
    if (Ioresult <> 0) then ✓
    begin
        writeln('Number contains characters'); ✓
    end;
end;

```

```

        number := 1;
    end
    else
    if number <> 0 then ✓
    begin

        str(number,numberstring);
        for k := 1 to length(numberstring) do ✓
        begin
            val(numberstring[k],howmany,code); ✓ ✓
            write(howmany:2,' '); ✓
            for j := 1 to howmany do ✓
                write('*'); ✓
            writeln; ✓
        end; {end for}
        end; {end if}

        writeln('PRESS <ENTER> TO CONTINUE ');
        readln;

        until number = 0; ✓
    end. (15)

```

[15]