



National Council for Vocational Awards

Information Technology CITXX
(Clonmel Central Technical Institute)

Computer Programming
C20013

Wednesday 17th May 2000
14:00 – 16:00

Answer all ten questions

Time allowed: 2 hours

This written exam counts as 50% of the total module

Answer all 10 questions. All questions carry equal marks.

1. This program contains 5 errors that will stop it from compiling. List the errors.

```
PROGRAM SillyBadProg (INPUT, OUTPUT)
USES WinCRT;
VAR
  TheCounter : Integer;
  SomeLetter : Char;
BEGIN
  WRITELN ('These are the first 10 squared numbers:');
  TheCount := 1;
  WHILE TheCounter <= 10 DO
    BEGIN
      WRITELN (TheCounter, ' : ', Sqr(TheCounter));
      TheCounter := TheCounter + 1;
    END;
  END;
END.
```

1	
2	
3	
4	
5	

2. Evaluate the following PASCAL statements

Statement	Result
Chr (116)	
Ord ('&')	
Chr (84)	
Chr(ord('S'))	

Write a PASCAL loop to display the lowercase letters of the alphabet.

3. What is a variable used for?

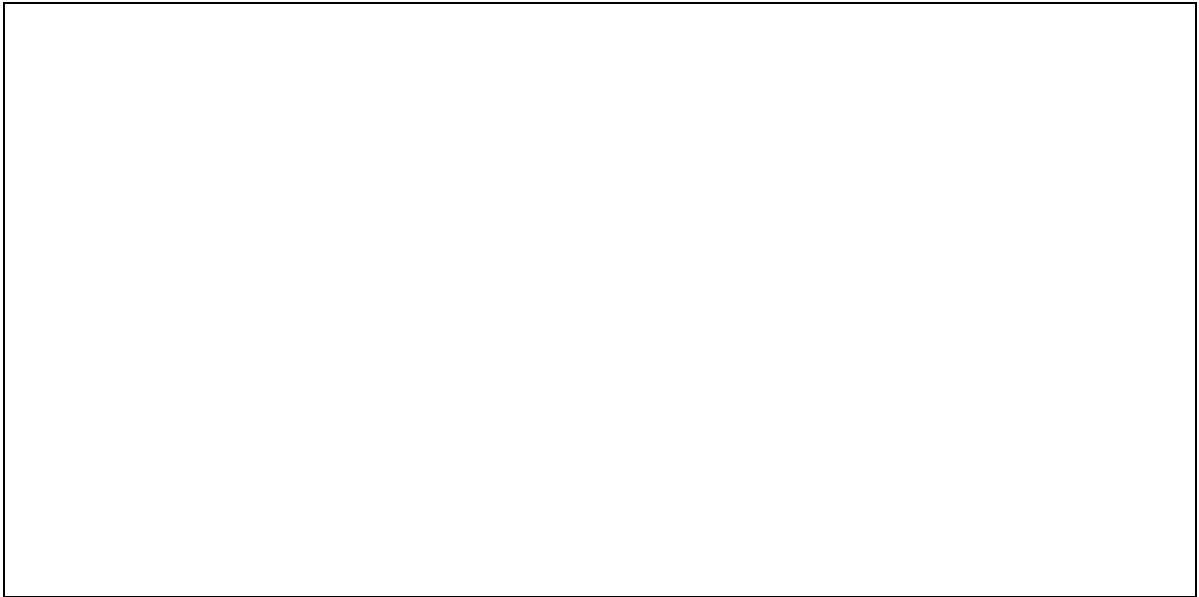
What is the difference between a character and a string variable?

4. What type of numeric data cannot be stored in the INTEGER data type?

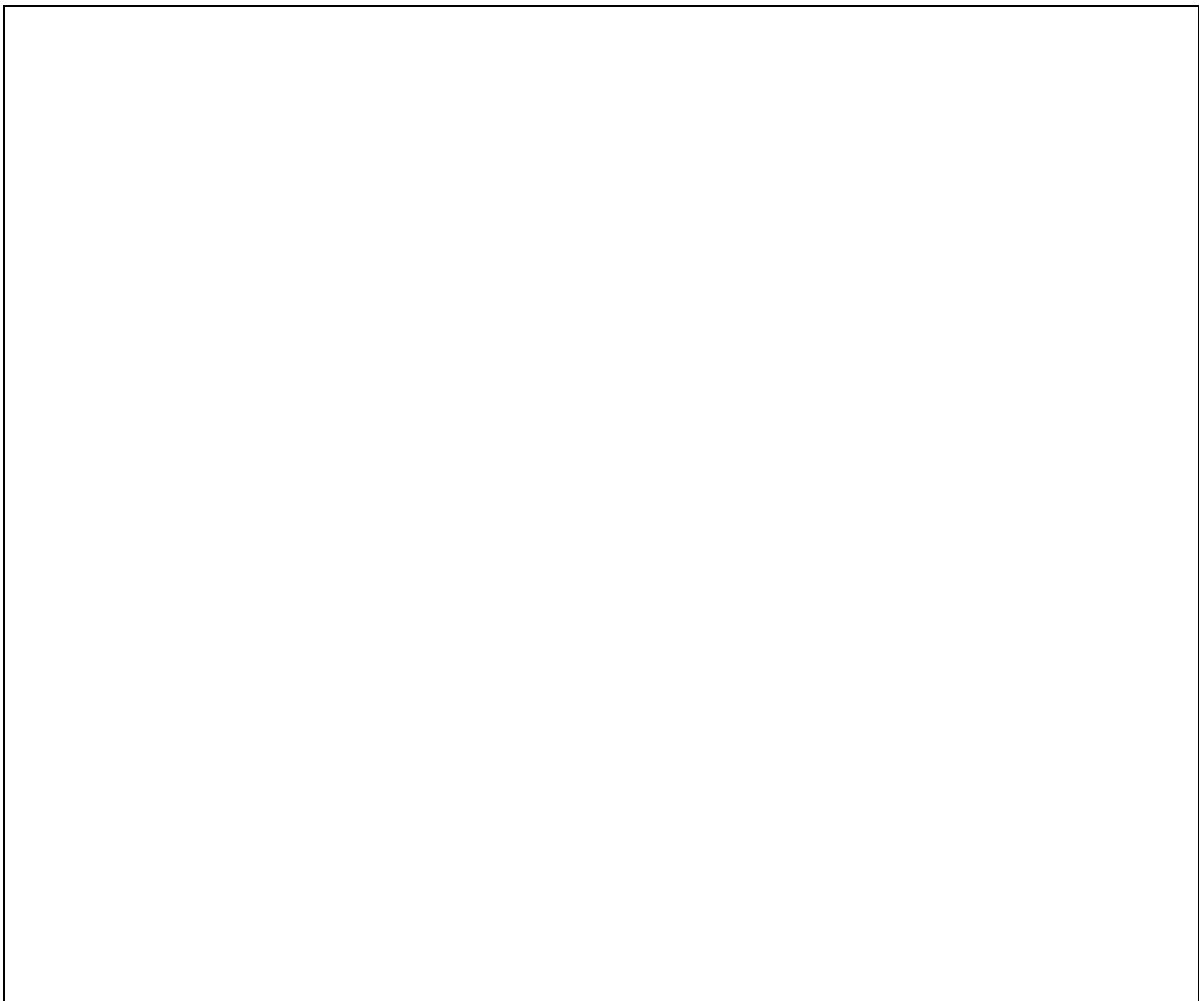
What is the advantage of initialising a loop variable before using it?

5. Write the general form of the IF statement:

Write a PASCAL snippet to read in a number and print out whether the number is positive or negative.



6. Write a PASCAL program containing a loop that writes out the even numbers between 9 and 99

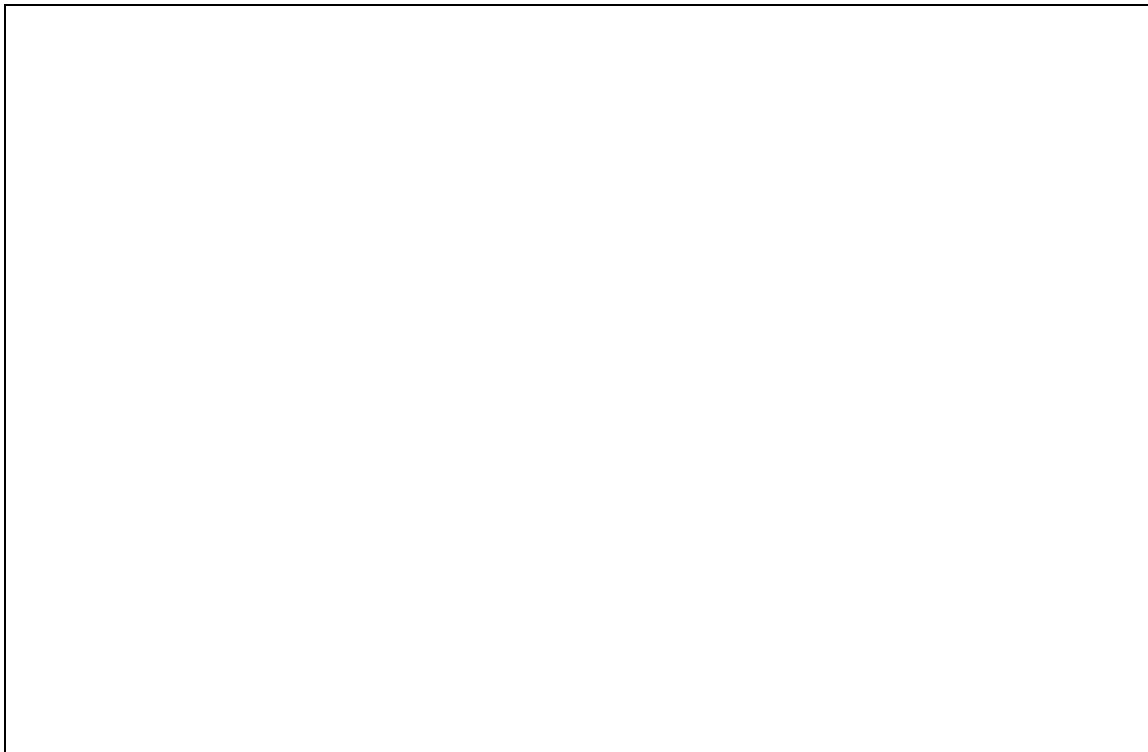


7. Draw a diagram to represent the state of the **Numbers** array after this program finishes:

*{You may assume that the **Numbers** array is initially filled with zeros }*

```
PROGRAM DoTheBoogie;  
USES WinCRT;  
VAR  
    BoogieText : String;  
    Numbers : ARRAY [1..20] OF Integer;  
    Loopy : Integer;  
BEGIN  
    BoogieText := 'DoTheBoogie';  
    Loopy := Length (BoogieText);  
    WHILE Loopy >= 1 DO  
        BEGIN  
            Numbers [Loopy] := ORD(BoogieText[Loopy]);  
            Loopy := Loopy - 1;  
        END;  
    END.  
END.
```

Draw your diagram here:



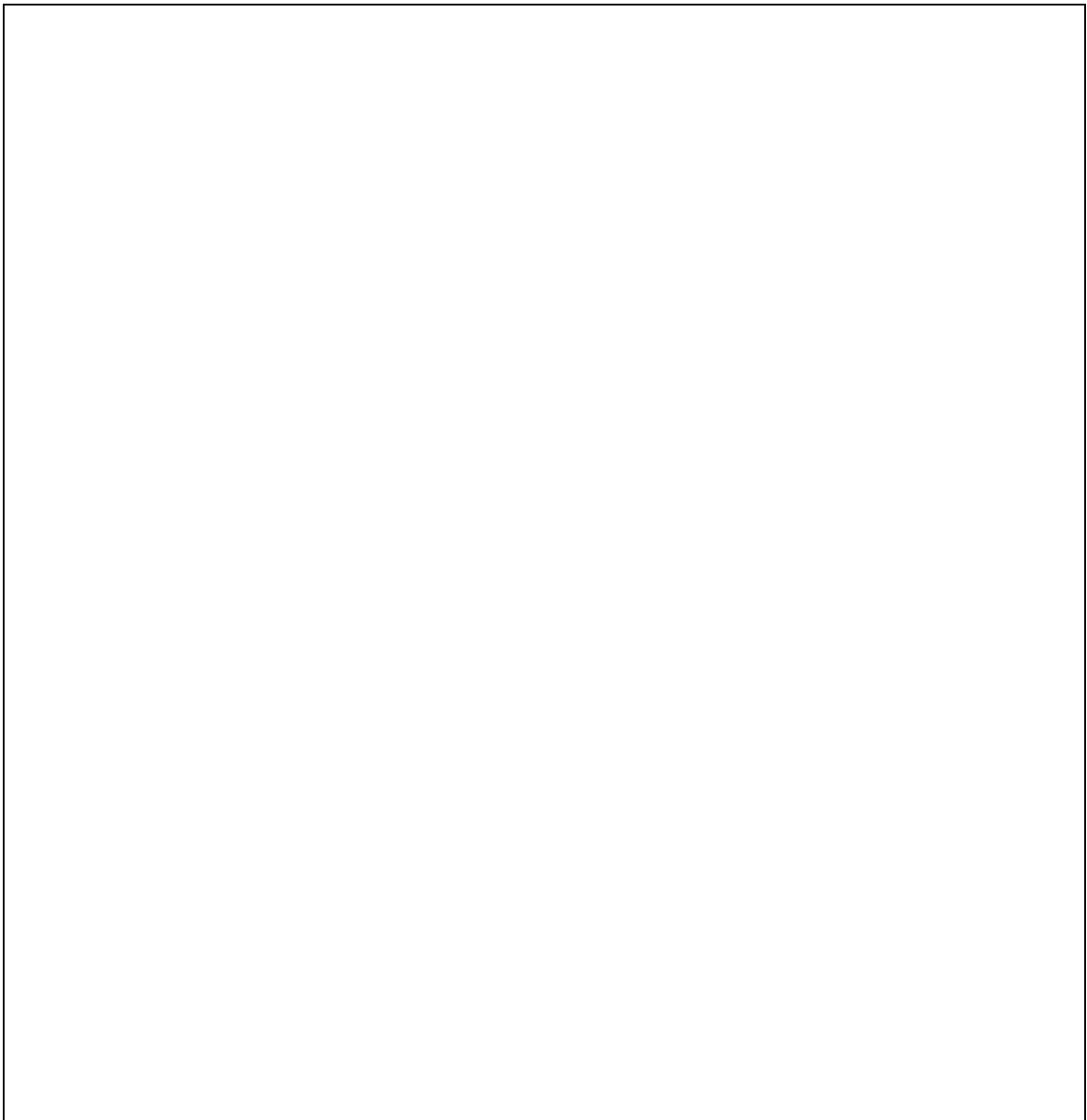
8. What output will the following program generate?

{You may assume that the letter entered by the user is 'x' }

```
PROGRAM StepDown (Input, Output);
USES WinCRT;
CONST
  LowestNumber = 15;
  StepAmount = 10;
VAR
  LV,
  HighestNumber : Integer;
  DoesNothing : Char;
BEGIN
  WRITE ('Enter a letter, please: ');
  READLN (DoesNothing);
  HighestNumber := ORD(DoesNothing);
  LV := HighestNumber;
  WHILE (LV >= LowestNumber) DO
    BEGIN
      WRITELN (LV);
      LV := LV - StepAmount;
    END;
END.
```

Write the output here:

9. Write a PASCAL loop to read in an array of 10 numeric variables; then write another loop to write out the contents of the array in reverse order.

A large, empty rectangular box with a thin black border, intended for the student to write their PASCAL code. The box is vertically oriented and occupies most of the page's width and height.

10. Write a PASCAL program snippet to read in a users age and income. The program should then generate output based upon the following table:

Age	Income	Output
<18		'Too young'
18 - 65	< 25000	'Get a real job'
18 - 65	>=25000	'Can I have a loan'
> 65		'Relax & enjoy!'

Provide sample data to indicate how you expect your code to behave.

Figure 1. *The ASCII table.*

			032	SP	033	!	034	"	035	#	
036	\$	037	%	038	&	039	'	040	(041)
042	*	043	+	044	,	045	-	046	.	047	/
048	0	049	1	050	2	051	3	052	4	053	5
054	6	055	7	056	8	057	9	058	:	059	;
060	<	061	=	062	>	063	?	064	@	065	A
066	B	067	C	068	D	069	E	070	F	071	G
072	H	073	I	074	J	075	K	076	L	077	M
078	N	079	O	080	P	081	Q	082	R	083	S
084	T	085	U	086	V	087	W	088	X	089	Y
090	Z	091	[092	\	093]	094	^	095	_
096	`	097	a	098	b	099	c	100	d	101	e
102	f	103	g	104	h	105	i	106	j	107	k
108	l	109	m	110	n	111	o	112	p	113	q
114	r	115	s	116	t	117	u	118	v	119	w
120	x	121	y	122	z	123	{	124		125	}
126	~	127	•								
Printable alphanumeric and punctuation characters used in normal document text											