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 initialisng 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.
```

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.

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	•								

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