



National Council for Vocational Awards

Information Technology CITXX
(Clonmel Central Technical Institute)

Computer Programming
C20013

Friday 21st May 1999
14:00 – 16:00

Answer all ten questions

Time allowed: 2 hours

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 SampleProg (INPUT, OUTPUT);
VAR
    NumCount : Integer
    Letter : Cher;
BEGIN
    Letter := ' ';
    WRITE ('Enter characters. Terminate with a full stop');
    WHILE Letter <> '.' DO
    BEGIN
        WRITE (UpCase (Letter));
        WRITE ('Next character, please');
        READLN (Letter);
    END;
    END
END.
```

1	
2	
3	
4	
5	

2. Evaluate the following PASCAL statements

Statement	Result
Chr (106)	
Ord ('?')	
Chr (68)	
Chr(ord('E'))	

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

3. What is a variable?

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

When is the INTEGER data type used and when is the REAL data type used?

Why are loops always initialised first?

4. Write the general form of the IF statement:

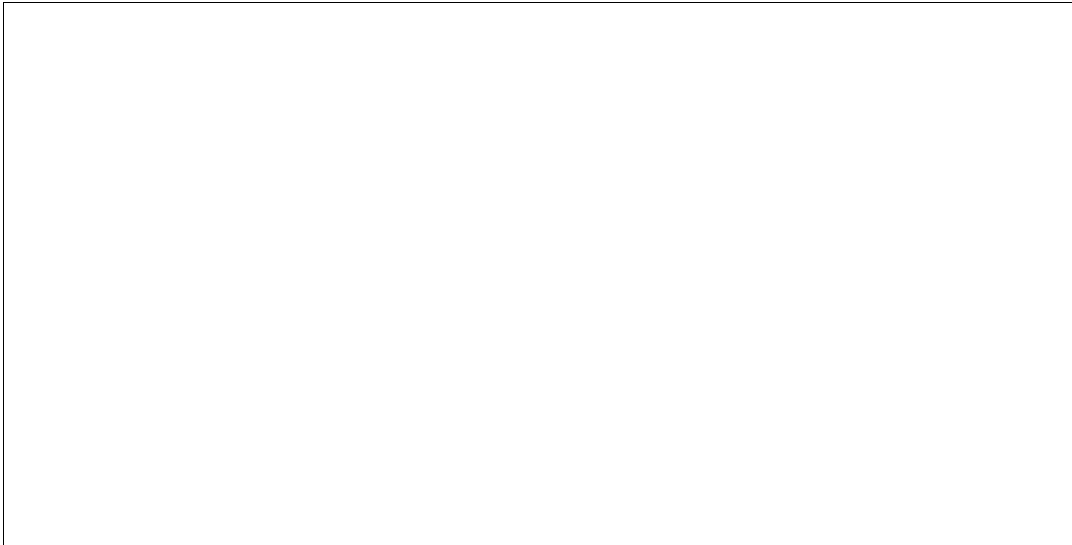
Write a PASCAL snippet to read in a number and print out whether the number is positive or negative.

5. Write a loop that writes out the odd numbers from 1 to 50

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

```
PROGRAM SampleProg;  
VAR  
    Numbers : ARRAY [1..20] OF Integer;  
    LV : Integer;  
BEGIN  
    LV := 1;  
    WHILE LV <= 20 DO  
        BEGIN  
            Numbers [LV] := (100 - LV);  
            LV := LV + 1;  
        END;  
    END.  
END.
```

Draw your diagram here:

A large empty rectangular box with a thin black border, intended for the student to draw a diagram representing the state of the Numbers array after the program finishes. The box is currently blank.

7. What output will the following program generate? (The number entered by the user is 5).

```
PROGRAM SampleProg (Input, Output);
VAR
    LV,
    OneNumber : Integer;
    DoesNothing : Char;
BEGIN
    WRITE ('Enter a number, please: ');
    READLN (OneNumber);
    LV := 65;
    WHILE (LV <= 90) DO
    BEGIN
        WRITE (Chr (LV));
        LV := LV + OneNumber;
    END;
END.
```

Write the output here:

--

8. Write a PASCAL loop to read in an array of 20 numeric variables; then write another loop to write out the contents of the array in reverse order. Also write out the total sum of all the values in the array.

9. 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		'Error'
18 - 65	< 25000	'Pauper'
18 - 65	>=25000	'Gimme'
> 65		'Enjoy!'

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

10. Write a PASCAL procedure which takes a number as a parameter and writes the square and then the cube of the number as output.

For example, if passed the number 3 as a parameter the procedure would display the numbers 9 and 27. If passed the number 5 as a parameter the procedure would display the numbers 125 and 625.

Use the incomplete procedure template shown below.

```
PROCEDURE SquareIt ();
```

```
VAR
```

```
BEGIN
```

```
END;
```

