

The Open University of Sri Lanka

Master of Arts in Teacher Education
Final Examination 2007

CSE1178: Programming in Pascal

Duration: 2 Hours



046

Date: 13.06.2007

Time: 10.00am to 12.00 noon

Answer **FOUR** questions **ONLY**

- (01) (i) Why do we need *computer languages* to communicate with computers?
Explain very briefly.
- (ii) What are the three main *components* of a modern computer?
- (iii) What are the two types of *memory* in a computer?
- (iv) Which of the following words are invalid variable names? Give reasons.
(a) \$amount (b) OUTPUT (c) 1stprogram (d) Force 123
- (v) Which of the following *declarations* are valid? Give reasons.

CONST

Pi = 22/7;
Gravity := 32;
Asterisk = '*';

- (02) (i) Write answers for the following Pascal expressions:
- (a) 9 MOD 2 (b) ROUND (4.4) (c) TRUNC (4.5)
(d) SUCC ('J') (e) PRED ('C')
- (ii) Obtain answers when you evaluate the following expressions considering *operator precedence* in Pascal.
- (a) $5 + 4 * 4 - 8 \text{ DIV } 2$
(b) $((5 + 4) * 4 - 8) \text{ DIV } 2$
- (iii) Write *arithmetic expressions* in Pascal for the following formulae:
- (a) PV/RT (b) $Ax^2 + Bx + C$ (c) B + Square root of $(B^2 - 4AC)$
- (iv) What are the four *basic data types* used in Pascal?
Classify each of the following according to the four basic types.
- (a) 34.278 (b) H
(c) 45 (d) <

(03)

- (i) Write the syntax of all *Repetition Structures* used in Pascal.
- (ii) Write a program in Pascal to add the first 100 integers from 1 to 100 using the *FOR* loop.
Hint: $\text{sum} = 1+2+3+4+\dots+100$
- (iii) Modify the above program to do the same operation using the *REPEAT-UNTIL* loop.
- (iv) Modify the above program to do the same operation using the *WHILE* loop.

(04)

- (i) The values of a, b, c are 15, 25 and 13 respectively. Write down the output of the following sequence of *WRITE/WRITELN* statements.

```
WRITELN ( a , b , c );  
WRITE ( a );  
WRITE ( b );
```

- (ii) The following program contains few errors.

```
PROGRAM TEST EXAMPLE (OUTPUT)  
var number1, number2 ; integer;  
begin;  
number1 = 24;  
number2 : = number1 * 4;  
writeln ( 'help )  
end
```

Identify each error and rewrite the corrected program.

- (iii) Write a program to find the total and average of 100 numbers using the *FOR-DOWN-TO* loop.
- (iv) Give the general form of the *IF-THEN* statement in Pascal. By means of an example, explain how this statement would be executed.

(05)

- (i) Write a Pascal program to read five integer values and to calculate the average of them. Display the total and the average in two separate lines. Keep a blank line in between the two lines.
- (ii) Write a Pascal program to calculate the area of a circle, when the radius is given. Area of a circle is given by $A = \pi R^2$, where A is the area, R is the radius and $\pi = 3.141$ which is a constant value.

(06)

- (i) Write a program to read in a *Mark* and to print out the Mark along with the grade. The grading system is as follows. All marks are considered to be integer values.

Mark		Grade
Mark < 0 or Mark > 100		Not acceptable
0	- 19	Fail
20	- 39	RE
40	- 49	D
50	- 59	C
60	- 69	B
70	- 100	A

- (ii) Write a program in Pascal to read in a number between 1 and 7. If the number is 1 then print "Monday". If it is 2 then print "Tuesday" and so on.

Hint: use CASE statement.

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