



Duration: 2 Hours

Date: 24.05.2006

Time: 01.30 p.m. – 03.30 n.m.

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

- (01) (i) State the *characteristics* of a modern computer.
(ii) Illustrate the *basic structure* of a 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) Begin
(b) #Force
(c) Int-Rate
(v) Which of the following *declarations* are valid? Give reasons.

CONST

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

(02)

- (i) Write down the *output values* of P, Q, R and S, when A = 18 and B = 6:
(a) P := A/B
(b) Q := A MOD B
(c) R := (A*B)/(A-B)
(d) S := A DIV B + 3 * B
(ii) Write Pascal *arithmetic expressions* for the following formulae:
(a) $-B + \text{Square root of } (B^2 - 4AC)$
(b) $\frac{PV}{RT}$
(iii) Write the syntax of all *repetition structures* used in Pascal.
(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) Give the general form of the *IF-THEN* statement in Pascal.
By means of an example, explain how this statement would be executed.

- (ii) Write down the outputs of the following:

(a) SUCC ('J') (b) PRED ('C')
(c) ROUND (5.4) (d) TRUNC (6.5)

- (iii) 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);
```

(04)

- (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

(05)

- (i) Write a program in Pascal to find the area of a circle, when the radius R is given. The area of a circle is given by $A = \pi R^2$, where A is the Area, R is the Radius and $\pi = 3.141$

- (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 the CASE statement.

(06)

The simple interest I for a sum of money P at a rate R for a period T is given by $I = (PRT) / 100$. Assume that the interest rate is a constant 8%. Write a program in Pascal to calculate the amount of interest for a given sum of money over a given period of time. [A part of the required program is given below:]

```
PROGRAM .....  
  
CONST  
    R = 0.08;  
  
VAR  
    I, P, T: REAL;  
  
BEGIN  
    :  
    :  
    I: = P*R*T;  
    :  
    :  
END.
```

(0)

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