The Open University of Sri Lanka
B.Sc. Degree Program – Level 03
Open Book Test: 2005/2006
CSU 1180: Programming Prospectives and Languages

Duration: 1½ Hours

Date: 04.08.06	*Time :* 4.00pm to 5.30pm

Answer all Three Questions

Q1.

a) Assume that you are asked to explain the contents of Computer Science subjects in level 03.
How would you describe the contents of Computer Science subjects at different levels of abstraction that can be understood by a student who wants to follow Computer Science in level 03?

b) What is compilation? Giving three reasons explain why a compiler is more advance than an interpreter

c) Assume the class called "Bicycles"inherits two classes namely, Mountain and Racing bicycles. Define suitable properties and methods of each object class.

Q2.

a) The following program contains few errors. Identify each error and rewrite the correct program.

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

b) Each of the following expression is incorrect. Rewrite each using correct Pascal statements.

```
Firstletter : = A;
StartCount := initial := 0;
Taxrate := 5%;
Total := 5 plus 7;
Efficiency := .35;
```

c) Evaluate the following expressions and write the result either as an integer or a real.

    i)   15 – 15 DIV 15
    ii) 50 * 10 – 4 MOD 3 * 5 + 80
    iii) 22 + 10 / 2
    iv) (15 - 10) /5 + 2 * 15 MOD 10
    v) 345E -01 - 1

d) Describe the expected output from the following code segments:

```
i) FOR I := 1 TO 2 DO
     BEGIN
         FOR J := 1 TO 2 DO
         BEGIN
             FOR K := 1 TO 2 DO
             BEGIN
                 WRITELN(I,J,K);
             END;
         END;
     END;
```

```
ii) FOR X := 1 TO 6 DO
     BEGIN
         FOR Y := 1 TO X DO
             WRITE(' * ');
             WRITELN;
     END;
     FOR X := 6 DOWNTO 1 DO
     BEGIN
         FOR Y := X DOWNTO 1 DO
             WRITE(' * ');
             WRITELN;
     END;
```

d) Determine which of the following statements are TRUE or FALSE. Justify your answer. (For each incorrect answer, you will loose 2 marks.)

    i)   The variability of Boolean cannot be used with the CASE statement.
    ii)   A value parameter is used only to pass data to a procedure.
    iii)   Integer, char, Boolean and subranges are predefined data types.
    iv)   A function is like a procedure except it returns a value.
    v)   When coding programs x^n can be written as $exp(n\ ln(x))$.

Q3.

a) Define an array called 'Number' of type Integer, with 10 elements.

b) Write a Pascal procedure to sort the above numbers into the ascending order.

c) Using your answer above, write a complete Pascal program to print the given numbers in the ascending order.

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