BSc. (Hons) Business Information Systems

Part Time - BIS1213

INTRODUCTION TO SOFTWARE ENGINEERING

Resit Examinations for 2002 – 2003 / Semester 1

Duration : 2 Hours

Instructions to Candidates:

1. You are required to answer all 4 questions.

This question paper contains 4 questions and 3 pages.
Question 1

a) What is meant by “evolutionary development” in software engineering? (6 marks)

b) Describe the different approaches to evolutionary development? (6 marks)

c) Give an outline of the incremental approach to software development? (6 marks)

d) How does the incremental approach to software development compensate partly for the weaknesses of evolutionary development? (7 marks)

Question 2

a) Describe the problems which may arise when specifying system requirements using natural language. (5 marks)

b) Using an appropriate structured language template describe system requirements for the following functions of a Video Club Rental System:
   - Add member
   - Rent book
   - Reserve book
   - Return book (20 marks)

Question 3

a) Describe the techniques of top-down and bottom-up testing. (6 marks)

b) What are the advantages and disadvantages of both techniques. (8 marks)

c) What do you understand by software inspection? (2 marks)

d) How is software inspection different from testing? (3 marks)

e) What are the relative advantages of software inspections as compared to software testing? (6 marks)
Question 4

For the following program in pseudo-code, attempt the following questions:

a) Draw the control graph (10 marks)

b) Determine its cyclomatic complexity. (5 marks)

c) Give the list of basis paths (5 marks)

d) For each basis path, find out the values that the parameters A and Size take and the expected result. (5 marks)

Program:

Integer Maximum (INTARRAY100 A, Integer SIZE)
{
    Integer i;
    If (Size < 1) or (Size > 100) then
        Print ("Error");
    Else
    { 
        Maximum: = A[1];
        i:= 2;
        While i <= Size
        {
            If A[i] > Maximum then
                Maximum: = A[i] ;
                i:= i + 1 ;
        }
    }
}