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CS-63

BACHELOR IN COMPUTER APPLICATIONS

Term-End Examination

December, 2011

05781

CS-63 : INTRODUCTION TO SYSTEM SOFTWARE

Time : 2 hours *Maximum Marks : 60*

Note : *Question no. 1 is* ***compulsory.*** *Answer* ***any three*** *questions from the rest.*

1. (a) Define Concurrent processes. How is mutual exclusion handled by Operating system ? Also, write the mutual exclusion algorithm. **10**

   (b) Write a shell program to find whether a given number is an Armstrong number or not. **7**

   (Example : 153 is Armstrong number as $153 = 1^3 + 5^3 + 3^3$)

   (c) Write an algorithm and draw the corresponding flowchart for generating the Fibonacci series. **8**

   (d) Explain any five functions of LEX (Lexical Analyser) **5**

2. (a) What are the limitations of a one-pass assembler ? Explain the additional tasks that are performed in two pass assemblers over one-pass assemblers. 6

(b) Explain necessary conditions for the occurrence of a Deadlock. 4

3. (a) What are the main advantages of Distributed Operating Systems ? How are the file system and protection supported in distributed operating systems ? 5

(b) Explain the address translation scheme in a segmented system. 5

4. (a) What is a scheduler ? Explain any two types of schedulers. 6

(b) What are the advantages of dynamic partition memory management ? 4

5. (a) What are offline and online communications in UNIX ? Give atleast two commands to carry out each of these communications in UNIX. 6

(b) Write a shell program to swap the values of two variables. 4
