CS-63

BACHELOR IN COMPUTER APPLICATIONS

Term-End Examination

June, 2012

CS-63 : INTRODUCTION TO SYSTEM SOFTWARE

Time : 2 hours   *Maximum Marks : 60*

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

1. (a) Define an assembler and the entities   6
        contained in an assembler language
        program. Explain the three assembler
        implementations.

    (b) What are deadlocks ? Depict a deadlock   5
         with the help of a Resource Allocation
         graph. Explain the four necessary
         conditions of a deadlock.

    (c) Write short notes on the following :-   9
         (i)   file permissions
         (ii) sed
         (iii) tar

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(d) Consider the following set of processes with the length of CPU - burst time in milliseconds :

Process	Burst time	Priority
P_1	10	3
P_2	1	1
P_3	2	3
P_4	1	4
P_5	5	2

Processes are assumed to have arrived in the order P_1, P_2, P_3, P_4, P_5 all at time O.

(i) Depict the scheduling of these processes using FCFS , SJF, non- preemptive priority.   6

(ii) Calculate the average turnaround time and average waiting time of any two of the above scheduling algorithm.   4

2. (a) Write a shell script in UNIX to generate the first 10 fibonnaci numbers.   4

(b) Describe blocks , fragments and inodes with reference to the UNIX file system.   6

3. (a) Write a shell script that accepts a file name from the user and checks whether the file is empty , is a directory , is readable or writeable.   4

(b) Explain how address translation occurs in a paging system with associative memory. Support your answer with a diagram.   6

4. Explain the syntax and working of the following   **10**
   UNIX commands , with an example :
   (a) who
   (b) ls
   (c) ps
   (d) cat
   (e) cp

5. (a) How is a disk organised ? What are the   **6**
       methods used by the operating system to
       manage the free disk blocks ?
   (b) Describe X - Windows and its development   **4**
       environment , with the help of a diagram.

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