

**BACHELOR IN COMPUTER
APPLICATIONS****Term-End Examination****December, 2008****CS-63 : INTRODUCTION TO SYSTEM SOFTWARE***Time : 2 hours**Maximum Marks : 60*

Note : Question number 1 is compulsory. Attempt any three questions from the rest.

1. (a) Write an algorithm and draw corresponding flow chart to find an element in a given list of "n" numbers by linear search method. 6
- (b) Write a shell program to find the factorial of a given number. 6
- (c) What do you mean by disk allocation? Give one approach to explain it. 4

- (d) Consider the following processes which are in ready queue at the same time :- 9

<u>Processes</u>	<u>CPU time</u>
P1	4
P2	3
P3	1
P4	5
P5	2

Calculate the average turnaround time and average waiting time with the following algorithm :

- (i) FCFS
 - (ii) SJF
 - (iii) RR (Quantum = 2)
- (e) Explain the following commands in UNIX :- 5 × 1 = 5
- (i) du
 - (ii) echo
 - (iii) kill
 - (iv) ed
 - (v) ls -l

2. (a) What is a symbol table ? What is the utility of it ? Explain the difference between syntax error and semantic error with examples. 5
- (b) How are Macros defined ? Write a macro to find the largest among the given three numbers. 5

3. (a) Give features of a simple batch system. What are the typical OS services to be offered to this kind of processing system. 4
- (b) What are the possible operations on a process ? Explain them. 3
- (c) Write a shell program to list the number and details of users who logged in the system till a particular date and time. 3
4. (a) Write a context free grammar for the following 'C' statements : 5
- (i) increment statement
- (ii) if-then-else statement
- (b) Give and explain one problem of synchronisation. Design an algorithm to solve this problem by semaphores. 5
5. (a) Discuss the functions of an Interactive Debugging System. How can this debugging system be related to other parts of the system. 5
- (b) Differentiate between paging and segmentation. Give an example to illustrate implementation of demand paging. 5

