

**BACHELOR OF COMPUTER
APPLICATIONS
(PRE-REVISED)**

Term-End Examination

June, 2013

**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) What are the essential conditions for a deadlock to occur ? Explain an algorithm to explain deadlock avoidance with an example. 7
- (b) Give a schematic diagram to explain the process of address translation through associative memory. Also explain the term 'compaction' and its drawbacks. 6
- (c) Explain first fit, best fit and worst fit algorithm for disk allocation. Explain with a suitable example for each. 9
- (d) Consider the following set of processes associated in the ready queue and arrived at the same time : 8

Process	CPU time
P ₁	8
P ₂	7
P ₃	7
P ₄	11
P ₅	5

Draw the Gantt Chart and calculate the average turnaround time and average waiting time for :

- (i) SJF scheduling
- (ii) FCFs scheduling

2. (a) Differentiate between various kinds of loaders and linkers. 4
- (b) Explain the phases of a compiler with the help of a suitable diagram. 6
3. (a) Categorise editors and explain the editor structure. 6
- (b) Explain the client server model in a distributed system. Give a diagram. 4
4. (a) Explain the following commands : 4
 - (i) % cat - u
 - (ii) % kill O
 - (iii) % vi
 - (iv) % man who
- (b) Write a shell program to calculate the average of numbers entered by the user. 4
- (c) Generate a Parse tree for expression (a*b + c) based on a grammar for an arithmetic expression. 2

5. (a) Give relative advantages and disadvantages of 4GL in an application development. Give two examples of 4GL 4
- (b) Explain components of major UNIX based GUIs. Also give a description of typical X-window development environment. 6
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