No. of Printed Pages : 3

CS-63

04042

BACHELOR IN COMPUTER APPLICATIONS

Term-End Examination

June, 2010

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) State 'Readers-Writers' problem and design an algorithm suggesting a solution to 'Readers-Writers' problem using semaphores. **8**

(b) Explain address mapping in a segmented system using an example. **5**

(c) Explain directory structure and file system in UNIX (with suitable diagrams). **5**

(d) Write a shell program to generate prime numbers from 1 to 100. **5**

(e) Explain the working of a 2-pass assembler (in detail). **7**

2. (a) Explain the conditions necessary for a deadlock to occur. Also, explain the deadlock avoidance algorithm with an example. 6

(b) Differentiate between contiguous and non contiguous disk allocation methods. 4

3. (a) Give a short note on system administration in UNIX OS. 5

(b) Explain the purpose of following commands : 5

(i) ls - r/
(ii) mkdir
(iii) wc
(iv) grep
(v) tr

4. (a) Explain the concept of dynamic relocation with an example. 5

(b) Consider the following set of processes with their respective CPU time : 5

Process	CPU time	Arrival Time
P_1	5	1.0
P_2	8	3.0
P_3	10	2.0
P_4	3	4.0

Calculate the average turnaround time and response time by SJF and FIFO algorithms.

5. (a) Construct a context-free grammar for accepting an English language statement "i am a boy". **4**

(b) Give a short note on client-server model in a distributed environment. **3**

(c) Explain X-WINDOWS architecture. **3**
