Exam.Code:0916
Sub. Code: 6398

2014

B.E. (Computer Science and Engineering)

Fourth Semester

CS-403: Operating System

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

Qus 1) (5*2=10)

a) Explain steps of process creation and termination.

b) What is binary and counting semaphore?

c) Define Busy Waiting? How it is overcome using Semaphore operations.

d) Explain inter-process and intra-process communication.

e) Distinguish deadlock avoidance and deadlock prevention

Unit I

Qus 2) Perform non-preemptive CPU scheduling algorithms for the given set of jobs and analyze their performance. (10)

Process	Arrival Time	Burst Time
1	0	3
2	2	6
3	4	4
4	6	5
5	8	2

Qus 3) a) How multithreading differs from multiprocessing? Explain the mechanism to create a thread and process. (5)

b) What are the various components of operating system structure and explain the simple and layered approach. (5)

Qus 4) a) State the different conditions for deadlock to occur? Explain methods for solutions of recovery from deadlock condition. (5)

b) Discuss the Resource-Allocation-Graph algorithm for deadlock avoidance. (5)

Unit II

Qus5) Consider page references 7,0,1,2,0,3,0,4,2,3,0,3,2,3 with four page frames. Find the number of page faults with optimal page replacement algorithm. (10)

Qus6) a) What is file system and what are the various file access methods? (5)

b) Explain the SCAN and C-SCAN disk scheduling. (5)

Qus7) Write note on the following: (2.5*4=10)

a) Indexed and contiguous file allocation

b) Demand paging

c) Unix and Linux

d) Internal and external fragmentation

x-x-x