Exam. Code: 0916
Sub. Code: 33430

2015
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

I. Answer the following:-

a) When a page fault occurs, and how it is handled by operating system?

b) Write a note on Dining-philosophers problem.

c) Explain the inter-process communication.

d) Explain seek time and latency time for disk I/O.

e) What is the role of fork and exec system calls? (5x2)

UNIT - I

II. a) Assume the following processes:

Process	Arrival Time	Burst Time
P1	5	5
P2	4	6
P3	3	7
P4	1	9
P5	2	2
P6	6	3

Draw a Gantt chart for execution of these processes using Round Robin scheduling algorithm and also calculate the average waiting time and average turnaround time. (5)

b) Explain any one preemptive and non-preemptive scheduling algorithm? (5)

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

b) Discuss the services provided by operating system. Discuss five system calls for MS-DOS operating system. (5)

IV. a) Explain process control block. (5)

b) Differentiate multiprogramming and time sharing system. (5)

P.T.O.

UNIT - II

V. Consider pages referenced by the CPU in order- 6,7,8,9,6,7,1,6,7,8,9,1 with three frames, explain FIFO & Optimal page replacement algorithms. (10)

VI. Explain SCAN and C-SCAN disk scheduling with one example of each. (10)

VII. Write note on the following:-

a) Thrashing

b) Indexed File allocation

c) Protection and security

d) Buffering and caching (4x2½)

x-x-x