FACULTY OF INFORMATICS
B.E. 3/4 (IT) I Semester (Suppl.) Examination, June 2012
OPERATING SYSTEMS

Time : 3 Hours]

[Max. Marks : 75

Note : *Answer **all** questions from Part **A**. Answer **any five** questions from Part **B**.*

PART – A   (25 Marks)

1. What is a system call ? What are its types ?   3

2. What is the job of a dipatcher ?   2

3. List the status of a process.   3

4. What is a deadlock ? What are the conditions for a deadlock to occur ?   3

5. What is a semaphore ? List various types of semaphores.   2

6. Compare paging and segmentation.   3

7. What is thrashing ? How can you control it ?   3

8. What are the merits and demerits of RAID ?   2

9. What are various types of system and network threats ?   2

10. What is an Access matrix ?   2

PART – B   (50 Marks)

11. a) Describe the actions taken by a Kernel to context switch between processes.   5

    b) Explain the significance of fields in a process table.   5

12. a) Describe the actions taken by a thread library to context switch between user level threads.   5

    b) What is a thread ? Explain the advantages of threads over processes.   5

13. Consider the following set of processes and their CPU burst times, calculate the average waiting time, average response time and average turnaround time for the algorithms FCFS, SJF, RR (quantum = 3) and priority scheduling.   10

Process	Burst time	Priority
P_1	5	4
P_2	12	1
P_3	16	3
P_4	18	2
P_5	2	5

14. Explain the deadlock avoidance with the help of banker's algorithm.   10

15. What are fixed partition and dynamic partition memory management schemes ? What are the advantages and disadvantages in each of the above scheme ?   10

16. Suppose a disk drive has 300 cylinders, numbered 0 to 299. The current position of the drive is 90. The queue of pending requests, in FIFO order is 36, 79, 15, 120, 199, 270, 89, 170. Calculate the average cylinder monuments for the following algorithms.   10
    1) FCFS   2) SSTF   3) SCAN   4) C-SCAN   5) LOOK

17. a) Explain various directory structures.   5
    b) Explain various protection mechanisms.   5