

G-19/2051

5322/MJ

OPERATING SYSTEM (CPE-208), B. Tech (4th Sem.)
END SEMESTER EXAM

Time Allowed: 03 Hours

Roll No.....

Maximum Marks: 50

Pass Marks: 20

Note: Section C is compulsory. Attempt any six questions, selection three questions from section A & B.

SECTION-A

Q1. Discuss advantages and disadvantages of

- i. Batch System
- ii. Multiprogrammed System
- iii. Time Sharing Systems

Q2. What are system calls and explain the importance of system calls?

Q3. Explain the Process Management concept with the process control block (PCB).

Q4. Consider the set of Processes, with the length of the CPU burst time given in Milliseconds.

Process	CPU Burst Time	Priority
P1	10	3
P2	1	1
P3	2	3
P4	1	4
P5	5	2

The processes are assumed to have arrived in the order P1, P2, P3, P4, P5 all at time 0.

(a) Draw the Gantt chart illustrating the execution of these processes using FCFS, SJF, Non-Preemptive priority and Round Robin (Quantum=2ms) scheduling.

(b) What is the average waiting time of each process for each of the scheduling algorithm?

Q5. Write down the various advantages of Layered structure as compared to simple structure of OS.

3*5 Contd. —

SECTION-B

- Q.6 Describe the FIFO and LRU page replacement algorithms with example.
- Q7. Explain the concept of Free space management in Operating Systems.
- Q8. List the various types of files and its attributes.
- Q9. What is disk scheduling? Explain the different scheduling techniques with examples.
- Q10. Explain the Directory structure of Operating System.

3*5

SECTION-C

Q11.

- a) What are the main goals of an Operating System?
- b) Discuss the importance of Hard Real Time Operating Systems?
- c) Differentiate Boot Block and Bad Block in Disk.
- d) Define turnaround time, explain it in detail.
- e) Explain the difference between Symmetric and Asymmetric Multiprocessing System with diagram.
- f) Define Virtual Memory in Operating System.
- g) Explain the disk structure in detail.
- h) Explain any one technique of free space management.
- i) What do you understand from thrashing in OS?
- j) How the Windows OS is different from Linux OS.

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10*2