

R09

Code: 9A05505

III B. Tech I Semester (R09) Supplementary Examinations, May 2012

OPERATING SYSTEMS
(Common to IT, ECC & CSE)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 Discuss the different classes of computer systems whose functions are most limited and whose objective is to deal with limited computation domains.
- 2 Consider the following set of processes, with the length of the CPU burst given in milliseconds:

Process	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, and P5 all at time 0.

- (a) Draw four Gantt charts that illustrate the execution of these processes using the following scheduling algorithms: FCFS, SJF, non preemptive priority (a smaller priority number implies a high priority) and RR (Quantum = 1).
 - (b) What are the turnaround and waiting processes for each process for each of the scheduling algorithms in part a?
- 3
 - (a) Explain the usage of a monitor.
 - (b) What are the requirements for solving critical-section problem?
- 4
 - (a) What is 50 percent rule of fragmentation?
 - (b) Compare and contrast paging and segmentation.
- 5 Describe Banker's algorithm to avoid a deadlock. What are the problems in its implementation?
- 6 What are the different types of directory structures?
- 7 Explain in detail various I/O transfer techniques.
- 8 Explain the capability based protection system HYDRA.
