

Q.P. Code : 5140

(3 Hours)

[Total Marks : 80

- N.B. :**
- (1) Question No. 1 is **compulsory**.
 - (2) Answer any **three** out of the remaining questions.
 - (3) Assume suitable **data** if **necessary**
 - (4) Assumptions made should be **clearly** stated.

1. (a) What is operating system? Explain the different functions of OS. 5
- (b) What is system call? Explain any five system calls. 5
- (c) Describe the structure of an I -Node in UNIX. 5
- (d) What are the different characteristics of real time operating systems? 5

2. (a) What is deadlock? What are the necessary and sufficient conditions to occur deadlock? Explain deadlock avoidance and Prevention. 10
- (b) Describe process management in Linux. 10

3. (a) Explain various page replacement algorithms with example. 10
- (b) Explain the working of EDF and RMA real time scheduling algorithms. 10

4. (a) Explain RAID with Different levels. 10
- (b) Consider a following set of processes, with length of CPU bursts given in milliseconds as follows: 10

Process	Burst Time	Arrival Time	priority
P1	8	0	3
P2	1	1	1
P3	3	2	2
P4	2	3	3
P5	6	4	4

- (i) Draw the Gantt Charts for FCFS, SJF, Preemptive priority and RR (Quantum = 2)
- (ii) What is the turnaround time of each process for above algorithms?
- (iii) What is the waiting time of each process for each of the above algorithms
- (iv) Which algorithms results in minimum average waiting time.

TURN OVER

5. (a) Explain the linked and indexed methods for allocating a disk space to a file. 10
- (b) How is a directory system useful in file organization? Explain single level, Two level and Hierarchical directory system. 10
6. Write a note on (any two) : 20
- (a) Cyclic Schedulers
 - (b) Linux file System
 - (c) Unix Security measures
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