QP Code : **14821**

(3 Hours)   [Total Marks : 80

N.B.: (1) Question No. **1** is **compulsory**.

(2) Attempt any **three** from remaining questions.

(3) **Figures** to the **right** indicate **full** marks.

(4) Assume **suitable** data if **necessary**.

1. (a) What is operating system ? Explain different functions of O.S.   5

(b) Explain role of process Control Block ?   5

(c) What is the difference between dead lock prevention and avoidance algorithms.   5

(d) Explain critical section problem.   5

2. (a) What are the different allocation methods with reference to File Systems ?   10

(b) Consider the following set of processes, with the length of CPU burst given in miliseconds. 10

Process	Burst time	Priority
P_1	10	3
P_2	1	1
P_3	2	3
P_4	1	4
P_5	5	2

The processes are assumed to have arrived in the order P_1, P_2, P_3, P_4, P_5 all at time 0.
Draw Gnatt charts for the following scheduling algorithms FCFS, SJF nonpreemptive
priority) and RR (quantum = 1) and also calculate turn around time, average waiting
time.

3. (a) Explain Dining philospher problem and solution to it.   10

(b) What do you mean by process ? Draw and explain process state diagram in Unix.   10

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