Calculate the average waiting time using priority scheduling and round robin scheduling algorithm. 3+3=6

3. Define Virtual Memory. Explain the process of converting virtual addresses to physical addresses with a neat diagram. 2+8=10

4. (a) Explain contiguous and noncontiguous memory allocation 4

   (b) Explain paging and segmentation. 3+3=6

5. (a) What are the facilities provided by the file system and the IOCS? 4

   (b) What are the file operations provided by processes? 6

6. (a) Explain access matrix protection system of operating system 6

   (b) What is Kernel and writes its main functions? 2+2=4

7. (a) Whatare the main differences between the spooling and buffering in OS. 5

   (b) Discuss the CPU scheduling criteria in brief. 5

8. (a) Why process synchronization is required? What is critical-section problem? Give the solution of critical -section problem. 1+2+3=6

   (b) Write short notes on deadlocks. 4

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B. Tech Odd Semester Examination, February, 2023

Electronics & Communication Engineering

(7th Semester)

Course No.: EC-EL-15

(Operatng System)

Full Marks: 50

Pass Marks: 15

Time: 2 hours

Note:
1. Attempt any five questions.
2. Begin each answer in a new page.
3. Answer parts of a question at a place.
4. Assume reasonable data wherever required.
5. The figures in the right margin indicate full marks for the question.
6. All the mathematical symbols and abbreviations have their usual meanings.

1. Define operating system. What are the goals of an operating system? Explain different types of operating system. 2+2+6=10

2. (a) What do you mean by processes and threads? Give the state transition diagram of a process. 2+2=4

   (b) Consider the following set of processes, assumed to have arrived at time 0, in the order P1, P2, ... Ps, with the length of the CPU burst given in milliseconds(ms): time quantum=4 ms.

Process	Burst time	Priority
P1	12	1
P2	1	3
P3	4	2
P4	4	5
P5	2	4