

XA (II) – Oper Sys (2)

2017-20

Time : 4 hours

Full Marks : 80

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer any five questions.

1. Explain the evolution of operation system. What is a system program ? Explain any three system programs.
2. What are the advantages of single process system, and multiprocess system ? Explain its advantages and disadvantages with suitable architectural diagrams. Explain any four system calls with examples.
3. What is a process ? Draw five state process models and explain each state transition.
4. Explain paging with its hardware diagram. What is demand paging ? What is the need for page replacement ? Explain through suitable diagram.

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5. What is a Deadlock ? What are the necessary conditions for a deadlock occurrence ? How can you prevent a system from a deadlock ? Explain.
6. What is the use of process control block ? Discuss the contents of PCB. Discuss how the PCB's are chained together to form a list of ready processes.
7. Differentiate between process and thread.
8. What do you mean by CPU scheduling ? Discuss CPU I/O burst cycle.
9. Consider the following page reference string
1, 2, 3, 4, 5, 3, 4, 1, 6, 7, 8, 9, 5, 4, 5, 4, 2
How many page faults occur for the following algorithms, with four page frames ?
(a) FIFO
(b) Optimal
(c) LRU
10. Explain the short-term, medium-term and long-term scheduling. Describe the differences among them.

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