

COMPUTER SCIENCE

Paper : CS03 : Theory-A, Operating System Concepts

Maximum Marks : 65

Time Allowed : 3 Hours

Note : Attempt five questions in all by including one question from each Section. Entire Question No. 9 is compulsory.

SECTION - A

1. Describe the different types of Operating System (OS) giving their differences and advantages in detail. 6
2. (a) What is the need of an Operating System ?
(b) Describe the main functions of an Operating System. 3,3

SECTION - B

3. (a) How a process is represented in the operating system by its PCB ?
(b) Explain various process states. Also show the movement of a process moving from one state to another with the help of diagram. 3,3
4. (a) Name and explain various scheduling criteria used in Process Scheduling Algorithms.
(b) Explain any two non-preemptive Process Scheduling Algorithms with examples. 3,3

SECTION - C

5. Explain the term Deadlock. State and explain the necessary conditions for the occurrence of Deadlock in computer system.
6. When is a system in safe state ? Which algorithms are used for keeping system in safe state ? Explain briefly.

SECTION - D

7. What do you understand by paging? How it works ?
8. Explain Demand Paging. When does Page Fault occur? Describe the

action taken by OS when it occurs.

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(Compulsory Questions)

9. Write short answers :

- (i) Give name of any two Operating Systems.
- (ii) What are the disadvantages of context switching?
- (iii) What is Traffic Controller ?
- (iv) Name any *two* Page Replacement Policies.
- (v) Differentiate between External and Internal Fragmentation.
- (vi) Differentiate between the Logical Address Space and Physical Address Space.

1 × 6 = 6