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SARDAR PATEL UNIVERSITY
MASTER OF COMPUTER APPLICATIONS
SEMESTER - II
COURSE PS02CMCA24 (Operating System Principles)
Friday 26th October, 2018

Time: 10:00 am to 1:00 pm

Max. Marks: 70

Q-1 Choose the most appropriate option for each question:

[8]

1. Which of the following is not an advantage of multiprocessor systems?
A) Increased throughput B) Economy of scale
C) Modularity D) Increased reliability
2. Which of the following is not a mode of execution provided by the CPU?
A) Supervisor mode B) Compiler mode
C) Kernel mode D) User mode
3. Which of the following is not stored in the PCB?
A) Threads B) Program counter value
C) Memory management information D) Accounting information
4. Which of the following is not a process synchronization mechanism?
A) Semaphore B) Mutex
C) Monitor D) None of these
5. Which of the following term is not associated with memory management?
A) Segmentation B) Fragmentation
C) Paging D) Formatting
6. Which of the following term is not associated with virtual memory?
A) Demand paging B) Page fault
C) Caching D) Page replacement
7. Which of the following is not a disk scheduling algorithm?
A) SJF B) SSTF
C) FCFS D) Scan
8. Which of the following is not an operation on file systems?
A) Mounting B) Unmounting
C) Formatting D) None of these

Q-2 Answer the following questions (Any Seven):

[14]

1. What are the two views of an operating system?
2. Differentiate between a program and a process.
3. Draw the process state diagram.
4. Explain the terms turnaround time and waiting time in the context of CPU scheduling.
5. Describe the critical section problem in brief.
6. Explain logical addresses and physical addresses.
7. Differentiate between fixed-sized partitioning and variable-sized partitioning in memory management techniques.

(1)

(PTO)

8. Write the names of any two page replacement algorithms.
9. What is the full form of RAID? What are its main advantages?

Q-3

- A. Define and explain in brief the following terms: [6]
i. Command interpreter ii. Kernel iii. System calls
B. Write a short note on multiprocessor systems. [6]

OR

- B. Explain in brief the types of protections typically provided by the operating systems. [6]

Q-4

- A. Explain the round robin CPU scheduling algorithm with an example and the corresponding Gantt chart. [6]
B. Write a short note on multithreading explaining the concept and its advantages. [6]

OR

- B. Write a short note on swapping. [6]

Q-5

- A. Explain segmentation in detail. [6]
B. Write a short note on virtual memory. [6]

OR

- B. Describe paging as a memory management scheme. [6]

Q-6

- A. List the attributes of files as well as the operations on files. [6]
B. Explain any one disk scheduling algorithm with the help of an example and a figure. [6]

OR

- B. Explain any three RAID levels with figures. [6]

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