

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

MSc(SS) DEGREE EXAMINATION MAY 2024  
(Third Semester)

Branch – SOFTWARE SYSTEMS (five year integrated)

OPERATING SYSTEM CONCEPTS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

1. If a process is executing in its critical section, then no other processes can be executing in their critical section. What is this condition called?
  - i) mutual exclusion
  - ii) critical exclusion
  - iii) synchronous exclusion
  - iv) asynchronous exclusion
2. In Round Robin Scheduling, Each process is provided a fix time to execute, it is called a?
  - i) Batch Time
  - ii) Job Time
  - iii) quantum
  - iv) Period
3. Swapping is also known as a
  - i) technique for memory management
  - ii) technique for memory compaction
  - iii) technique for memory addressse
  - iv) technique for dynamic linking
4. The time taken to move the disk arm to the desired cylinder is called the
  - i) positioning time
  - ii) random access time
  - iii) seek time
  - iv) rotational latency
5. Which of the following provide system resource access to virtual machines?
  - i) VMM
  - ii) VMC
  - iii) VNM
  - iv) All of Above

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

6. a. What are system calls? Explain.  
(Or)  
b. Explain about the states of the process.
7. a. Narrate about I/O burst cycle.  
(Or)  
b. Narrate about mutual exclusion in detail.
8. a. What are buddy systems? Explain.  
(Or)  
b. What is demand paging? Explain.
9. a. What is i/o buffering? Explain.  
(Or)  
b. Write about directory structure in detail.
10. a. What are the requirements of virtulization? Mention.  
(Or)  
b. What is para virtualaization? Explain.

Cont...

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11. a. Write and explain about evolution of operating systems.  
(Or)  
b. Explain about multi threading models.
12. a. Write and explain about any two process scheduling algorithms.  
(Or)  
b. How to detect and recover the deadlock? Explain.
13. a. Briefly explain about segmentation with example.  
(Or)  
b. Demonstrate how the page faults are handled.
14. a. What is RAID? Explain.  
(Or)  
b. How to manage the free space? Explain.
15. a. What are type 2 hypervisors? Explain it with an example.  
(Or)  
b. How to virtualization is applied in multiprocessor environment? Explain.

Z-Z-Z

END