

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc(SS) DEGREE EXAMINATION DECEMBER 2023
(Third Semester)

Branch – SOFTWARE SYSTEMS (Five Years Integrated)

OPERATING SYSTEMS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

1. A process having multiple threads of control implies _____
 - (i) It can do more than one task at a time
 - (ii) It can do only one task at a time, but much faster
 - (iii) It has to use only one thread per process
 - (iv) None of the mentioned
2. A system is in the safe state if _____
 - (i) The system can allocate resources to each process in some order and still avoid a deadlock
 - (ii) There exist a safe sequence
 - (iii) All of the mentioned
 - (iv) None of the mentioned
3. Because of virtual memory, the memory can be shared among _____
 - (i) threads
 - (ii) processes
 - (iii) instructions
 - (iv) none of the mentioned
4. The time taken to move the disk arm to the desired cylinder is called the _____
 - (i) positioning time
 - (ii) random access time
 - (iii) rotational latency
 - (iv) seek time
5. Point out the wrong statement.
 - (i) Load balancing virtualizes systems and resources by mapping a logical address to a physical address
 - (ii) Multiple instances of various Google applications are running on different hosts
 - (iii) Google uses hardware virtualization
 - (iv) All of the mentioned

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a. Appraise system calls and the purpose of system Calls.
OR
b. Mention the various states of thread and the relationship between them.
- 7 a. Enumerate various process scheduling algorithms.
OR
b. Justify pre-emptive and non-preemptive of process.
- 8 a. Neatly sketch Memory Hierarchy.
OR
b. What is demand paging?

Cont...

- 9 a. Produce various types of I/O devices.
OR
b. Discuss disk mounting.
- 10 a. Determine para virtualization.
OR
b. Explain I/O virtualization.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 6 = 30)

- 11 a. How are process created and terminated?
OR
b. Elucidate the performance of dual mode in operating system.
- 12 a. Appraise Mutual exclusion and Critical Section Problems.
OR
b. Analyze deadlock? Discuss various methods of handling deadlocks.
- 13 a. Compare and contrast fixed partitioning and dynamic partitioning.
OR
b. Elucidate the need for virtual memory management.
- 14 a. Discuss various levels of RAID technologies.
OR
b. Elucidate the means by which files are allocated and free spaced management.
- 15 a. Explain type I and type 2 Hypervisors.
OR
b. Enumerate virtualization in multiprocessor environment.

ZZZ

END