PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

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

Branch – **SOFTWARE SYSTEMS (Five Years 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. To access the services of operating system, the interface is provided by the _____.
   (i) System calls (ii) API (iii) Library (iv) Assembly instructions
2. Which of the following is non-preemptive algorithm?
   (i) Priority Based Scheduling (ii) Shortest Remaining Time
   (iii) FCFS (iv) shortest job first
3. _____ is a memory management technique in which process address space is broken into blocks of the same size.
   (i) Fragmentation (ii) Frames
   (iii) Paging (iv) Address Translation
4. The time taken for the desired sector to rotate to the disk head is called _____.
   (i) positioning time (ii) random access time
   (iii) seek time (iv) rotational latency
5. An operating system running on a Type _____ VM is full virtualization.
   (i) 1 (ii) 2 (iii) 3 (iv) All

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6. a. Mention the purpose of PCB.
   (OR)
   b. Narrate the models of handling Multi threads.

7. a. Narrate the methods for scheduling threads.
   (OR)
   b. How to avoid deadlock? Narrate.

8. a. Mention the difference between fixed partition and dynamic partition.
   (OR)
   b. What is demand paging? Explain.

9. a. Narrate the type of i/o devices.
   (OR)
   b. Mention the different access methods of files.

10. a. Why we need hypervisors? Mention the purpose.
    (OR)
    b. What is memory virtualization? Explain.

Cont...

SECTION -C (30 Marks)

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

11. a. Write and explain about services provided by the operating systems.

(OR)

b. How the IPC are handled? Explain.

12. a. Explain about any two process scheduling algorithms in detail.

(OR)

b. Write the various methods for handling the deadlocks.

13. a. Compare paging and segmentation to mention the differences.

(OR)

b. Demonstrate any three page replacement algorithms with example.

14. a. Briefly explain about any two disk scheduling Algorithm.

(OR)

b. Narrate the architecture of file system with diagram.

15 . a. Explain the type 1 hypervisors with proper examples.

(OR)

b. What is i/o Virtualization? Explain it with an example.

Z-Z-Z END