PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2023
(Third Semester)

Branch – **COMPUTER TECHNOLOGY**

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   An Bootstrap program is a _____
   (i) Software   (ii) Hardware
   (iii) Firmware   (iv) None of these

2   The system which has multiple computing cores on single processing chip is _____
   (i) Multitask systems   (ii) Multicore systems
   (iii) Distributed system   (iv) Interactive System

3   What is higher-level software tools to solve the critical-section problem?
   (i) Mutex locks   (ii) Dispatcher
   (iii) Controller   (iv) Monitor

4   With this loading, a routine is not loaded until it is called _____
   (i) Initial Loading   (ii) Compile Time Loading
   (iii) Dynamic Loading   (iv) Relocation

5   To increase efficiency, most file systems group blocks together into larger chunks, frequently called _____
   (i) Block   (ii) Controller
   (iii) Host Adapter   (iv) clusters

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

6   a) Differentiate Multiprogramming with Multitasking
   OR
   b) Make a short note about Virtualization.

7   a) Compare Single Threaded and Multi-Threaded processes.
   OR
   b) State the function of Dispatcher.

8   a) How can you avoid critical section problem? Mentions three different solutions for achieving this.
   OR
   b) Specify the three ways of handling Deadlock.

9   a) Compare and contrast Logical Address Space with Physical Address Space.

OR

b) How the page fault was handled in Demand Paging ? Explain.

10 a) Outline a short note on Boot Block.

OR

b) Make a note on Sequential Accessing method of File system.

SECTION -C (30 Marks)
Answer ALL questions
ALL questions carry EQUAL Marks   (5 x 6 = 30)

11 a) Illustrate the Distributed Systems with example.

OR

b) Highlight the Operating System Services which are helpful to User.

12 a) Specify the challenging areas in programming in multicore systems.

OR

b) Summarize various criterions for comparing CPU Scheduling algorithms.

13 a) Illustrate the Critical Section Problem of process synchronization.

OR

b) Examine the use of Banker's Algorithm through an example.

14 a) How the Shared pages are handled in Paging Technique.? Justify.

OR

b) Demonstrate Optimal Page Replacement Algorithm with example.

15 a) Highlight the different types of HDD Scheduling algorithms.

OR

b) Elaborate the File System Structure in detail.

Z-Z-Z   END