PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BVoc DEGREE EXAMINATION DECEMBER 2023
(Second Semester)

Branch – NETWORKING & MOBILE APPLICATION

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   The number of processes completed per unit time is known as _____.
    (i)   Output   (ii) Throughput
    (iii) Efficiency   (iv) Capacity

2   Banker's algorithm is used _____.
    (i)   to prevent deadlock   (ii) to deadlock recovery
    (iii) to solve the deadlock   (iv) None of these

3   The address of a page table in memory is pointed by _____.
    (i)   stack pointer   (ii) page register
    (iii) program counter   (iv) page table base register

4   RAID stands for _____.
    (i) Redundant Allocation of Inexpensive Disks
    (ii) Redundant Array of Important Disks
    (iii) Redundant Allocation of Independent Disks
    (iv) Redundant Array of Independent Disks

5   Mapping of file is managed by _____.
    (i)   file metadata   (ii) page table
    (iii) virtual memory   (iv) file system

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

6   a   Mention the objectives and functions of Operating System.
                            OR
    b   Summarize the Generation of Operating System.

7   a   Elucidate Threads and its type.
                            OR
    b   Define Deadlock in the context of OS. List the four necessary conditions for a deadlock to occur.

8   a   What is paging? How does it differ from traditional memory partitioning?
                            OR
    b   Compare Shortest Job First vs Shortest Remaining Job First.

        Describe the concept of memory – mapped I/O and its advantages.
                            OR
        Show the benefits and limitations of using a Disk Cache.

10 a What are the benefits of using record blocking in file storage?

OR

b Bring out the primary goals of File System Security.

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

11 a What is meant by Process? Explain various fields of Process Control Block with neat diagram.

OR

b Discuss the concept of Process State Transition and draw a neat transition diagram.

12 a Categorize the different approaches for preventing deadlock.

OR

b Analyze the deadlock avoidance with suitable example.

13 a Draw a diagram of segmentation memory management scheme and explain its principle.

OR

b Evaluate the following process of scheduling algorithm with example.
      i. FCFS   ii. Round Robin

14 a Analyze the SCAN and C-SCAN disk scheduling algorithm and their advantages.

OR

b What do you mean by RAID structure and explain its types of RAID level?

15 a Describe in detail about File Sharing and Protection.

OR

b Elaborate on file system and directory implementation with neat diagram.

Z-Z-Z   END