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Subject Code: BBC403

Roll No:

BCA

(SEM. II) THEORY EXAMINATION 2025-26

OPERATING SYSTEMS

TIME: 3 HRS

M.MARKS: 70

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.****2x 7 = 14**

(a)	Define operating system.	CO-1	K2
(b)	What is time-sharing system?	CO-1	K2
(c)	Define process.	CO-1	K2
(d)	What is semaphore?	CO-1	K2
(e)	Define deadlock.	CO-1	K2
(f)	What is paging?	CO-1	K2
(g)	Define file system.	CO-1	K2

SECTION B**2. Attempt any three of the following:****7 x 3 = 21**

(a)	Explain layered structure of operating system.	CO-1	K2
(b)	Explain Peterson's solution for critical section problem.	CO-1	K2
(c)	Explain process states and process control block (PCB).	CO-1	K2
(d)	Explain page replacement algorithms.	CO-1	K2
(e)	Explain disk scheduling algorithms.	CO-1	K2

SECTION C**3. Attempt any one part of the following:****7 x 1 = 7**

(a)	Explain types of operating systems (Batch, Time-sharing, Real-time).	CO-1	K2
(b)	Explain monolithic and microkernel system structures.	CO-1	K2

4. Attempt any one part of the following:**7 x 1 = 7**

(a)	Explain semaphores and mutual exclusion problem.	CO-1	K2
(b)	Explain dining philosopher problem with solution.	CO-1	K2

5. Attempt any one part of the following:**7 x 1 = 7**

(a)	Explain CPU scheduling algorithms (FCFS, SJF, Round Robin).	CO-1	K2
(b)	Explain CPU scheduling algorithms (FCFS, SJF, Round Robin).	CO-1	K2

6. Attempt any one part of the following:**7 x 1 = 7**

(a)	Explain segmentation and paging with comparison.	CO-1	K2
(b)	Explain virtual memory and demand paging.	CO-1	K2

7. Attempt any one part of the following:**7 x 1 = 7**

(a)	Explain I/O buffering and RAID.	CO-1	K2
(b)	Explain file organization and file access methods.	CO-1	K2