23CTU313N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(Third Semester)

Branch- **COMPUTER TECHNOLOGY**

OPERATING SYSTEMS

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Which of the following services or storage available over the Internet? a) IaaS b) SaaS c) PaaS d) MaaS	K1	CO1
	2	Relate the process that may be performing an activity but is not apparent to the user is _____. a) Background Process b) Service Process c) Empty Process d) Visible Process	K2	CO1
2	3	How many ways are there to establishing a relationship between user and kernel threads? a) 3 b) 5 c) 6 d) 2	K1	CO2
	4	Relate the time interval from the time of submission of a process to the time of completion a) Turnaround Time b) Waiting Time c) Response Time d) Throughput Time	K2	CO2
3	5	what is the main purpose of a mutex lock in process synchronization? a) To prevent race conditions b) To increase CPU speed c) To allocate memory dynamically d) To schedule processes in order	K1	CO3
	6	Which condition requires that at least one resource must be non-shareable for deadlock to occur? a) Mutual Exclusion b) Hold and Wait c) No Preemption d) Circular Wait	K2	CO3
4	7	Which of the following strategy produces the smallest left over hole in memory management? a) Best fi b) First fi c) Worst fi d) Last fi	K1	CO4
	8	Relate the term in paging, the memory is divided in to fixed size blocks. a) Frames b) Segments c) Pages d) Blocks	K2	CO4
5	9	Which of the following is not a file access method? a) Random Access Memory b) Indexed Access c) Indexed Access d) Direct Access	K1	CO5
	10	In linked Allocation each block contains a) Pointer to the next Block b) Data only c) File name d) File Index	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Explain the three fundamental approaches for users to interface with the operating system with example.	K2	CO1
		(OR)		
	11.b.	Outline the communication models used in Inter process Communication.		
2	12.a.	Survey about the five areas present challenges in programming for multicore systems.	K4	CO2
		(OR)		
	12.b.	List out the Basic Concepts of CPU Scheduling.		
3	13.a.	Examine how Mutex Lock protect critical sections and thus prevent race conditions?	K4	CO3
		(OR)		
	13.b.	List out the Methods for Handling Deadlocks in operating system.		
4	14.a.	Analyze Swapping with paging and Swapping on mobile Systems.	K4	CO4
		(OR)		
	14.b.	Examine the Basic concepts of Demand Paging in operating systems.		
5	15.a.	Discuss drive initialization, booting from a drive and bad-block recovery in Storage Device Management.	K4	CO5
		(OR)		
	15.b.	Distinguish various File Access Methods with example.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Summarize Operations on Process with a neat diagram.	K2	CO1
2	17	Compare CPU Scheduling algorithms with example.	K4	CO2
3	18	Discover the necessary conditions and Resource-Allocation Graph in Deadlock Characterization.	K4	CO3
4	19	Classify Page Replacement techniques with example.	K4	CO4
5	20	Discover Free Space Management in operating system.	K4	CO5

Z-Z-Z END