23ITU312N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2025
(Third Semester)

Branch – **INFORMATION 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	To access the services of the operating system, the interface is provided by the _____ a) Library b) System calls c) Assembly instructions d) API	K1	CO1
	2	On systems where there is multiple operating systems, the decision to load a particular one is done by _____. a) process control block b) file control block c) boot loader d) bootstrap	K2	CO1
2	3	Semaphore is a _____ to solve the critical section problem. a) hardware for a system b) special program for a system c) integer variable d) global variable	K1	CO2
	4	CPU scheduling is the basis of _____ a) multiprogramming operating systems b) larger memory sized systems c) multiprocessor systems d) small memory sized systems	K2	CO2
3	5	The segment of code in which the process may change common variables, update tables, write into files is known as _____ a) program b) critical section c) non – critical section d) synchronizing	K1	CO3
	6	If a process fails, most operating system write the error information to a _____ a) new file b) another running process c) log file d) entry file	K2	CO3
4	7	Because of virtual memory, the memory can be shared among _____ a) processes b) threads c) instructions d) Swapping	K1	CO4
	8	Choose the concept in which a process is copied into the main memory from the secondary memory according to the requirement. a) Paging b) Demand paging c) Segmentation d) Swapping	K2	CO4
5	9	_____ is a unique tag, usually a number identifies the file within the file system. a) File identifier b) File name c) File type d) File close	K1	CO5
	10	The operating system keeps a small table containing information about all open files is called _____. a) file table b) directory table c) open-file table d) system table	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 various services of operating system.	K2	CO1
		(OR)		
	11.b.	Compare linkers and loaders.		
2	12.a.	Explain the hardware support for synchronization.	K4	CO2
		(OR)		
	12.b.	Examine the methods for handling deadlocks.		
3	13.a.	Summarize the structure of the page table in memory management.	K3	CO3
		(OR)		
	13.b.	Evaluate the demand paging in virtual memory management.		
4	14.a.	Discuss the process of HDD scheduling with diagram.	K4	CO4
		(OR)		
	14.b.	Evaluate the requirements of RAID structure.		
5	15.a.	Conclude the purpose of directory structure in operating system.	K3	CO5
		(OR)		
	15.b.	Identify the various operations on file system.		

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	Analyze the implementation of inter-process communication.	K4	CO1
2	17	Examine the methods for deadlock avoidance algorithm with example.	K4	CO2
3	18	Evaluate the basic concept of contiguous memory allocation with diagram.	K4	CO3
4	19	Compare and construct the storage device management and swap space management.	K4	CO4
5	20	List the allocation methods in file system and explain.	K4	CO5

Z-Z-Z END