

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2024
(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

$$(10 \times 1 = 10)$$

Module No.	Question No.	Question	K Level	CO
1	1	A _____ can be used to prevent a user program from never returning control to the operating system. a) portal b) program counter c) firewall d) timer	K1	CO1
	2	Which one of the following is the deadlock avoidance algorithm? a) throughput b) response time c) process output d) turnaround time	K2	CO1
2	3	Which of the following algorithms tends to minimize the process flow time? a) FCFS b) SJF c) EDF d) LJF	K1	CO2
	4	_____ is the deadlock avoidance algorithm. a) Round Robin b) Ostrich c) Banker's d) Eelvator	K2	CO2
3	5	Which of the following is not a contiguous memory management technique? a) partition b) over lays c) both (a) and (b) d) paging	K1	CO3
	6	Which of the following field in a page table entry indicates which page frame of memory is occupied by the page? a) page table b) invalid bit c) page frame d) valid bit	K2	CO3
4	7	A single parity bit can be used for : a) multiple error correction b) detection c) few error correction d) swap	K1	CO4
	8	Expand RAID. a) Redundant Access of Inexpensive Disks b) Redundant Arrays of Information Disks c) Redundant Arrays of Inexpensive Disks d) Redundant Access of Information Disks	K2	CO4
5	9	Which file attribute is used to access control information determines who can do reading, writing, executing? a) protection b) type c) identifier d) name	K1	CO5

Cont...

5	10	The lowest level, the I/O control, consists of _____ and interrupt handlers to transfer information between the main memory and the disk system. a) disk drive c) file allocation	b) virtual memory d) device driver	K2	CO5
---	----	---	---------------------------------------	----	-----

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry **EQUAL** Marks

$$(5 \times 7 = 35)$$

Module No.	Question No.	Question	K Level	CO
1	11.a.	What is an operating system? Explain System calls.	K1	CO1
		(OR)		
	11.b.	What are the basic operations involved in an operating system?		
2	12.a.	Classify the importance of the First-Come, First-Served (FCFS) scheduling algorithm.	K2	CO2
		(OR)		
	12.b.	Explain the Banker's algorithm with example.		
3	13.a.	Demonstrate the structure and usage of a page table.	K2	CO3
		(OR)		
	13.b.	Summarize the concepts of memory compression.		
4	14.a.	Examine the working principles of HDD scheduling algorithm.	K4	CO4
		(OR)		
	14.b.	Analyze the importance of swap space management.		
5	15.a.	Categorize the structure of directories.	K4	CO5
		(OR)		
	15.b.	Analyze the various operations of a file system.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry EQUAL Marks

$$(3 \times 10 = 30)$$

Module No.	Question No.	Question	K Level	CO
1	16	Analyze the various services provided by an operating system.	K4	CO1
2	17	Examine the strategies employed for deadlock prevention in operating systems.	K4	CO2
3	18	Examine the need for demand paging.	K4	CO3
4	19	Discover how error correction is implemented in an operating system.	K4	CO4
5	20	Analyze the various services of free space management.	K4	CO5