



BRAINWARE UNIVERSITY

Term End Examination 2023-2024 Programme - B.Tech.(CSE)-AIML-2021/B.Tech.(CSE)-DS-2021/B.Tech.(CSE)-AIML-2022/B.Tech.(CSE)-DS-2022

Course Name - Operating Systems Course Code - PCC-CSM401/PCC-CSD401 (Semester IV)

Time: 2:30 Hours Full Marks: 60

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

- 1. Choose the correct alternative from the following:
- (i) Identify the outermost component of Operating System
 - a) Kernel

c) Both a and b

- d) None of the mentioned
- (ii) Timer is used to locate a single
 - a) Job

b) Time

c) Computer

d) Information

- (iii) Identify the master software
 - a) Operating System
 - c) Both a and b

- b) Application Software
- d) None of the mentioned
- (iv) Represent medium-term scheduler.
 - a) It selects which process has to be brought into the ready queue
- b) It selects which process has to be executed next and allocates CPU
 - c) It selects which process to remove from memory by swapping
- d) None of the mentioned
- (v) An SJF algorithm is simply a priority algorithm where the priority is grouped with
 - a) the predicted next CPU burst
- b) the inverse of the predicted next CPU burst

c) the current CPU burst

- d) anything the user wants
- (vi) Indicate the following scheduling algorithm which gives minimum average waiting time
 - a) Round Robin

b) FCFS

c) SJF

- d) Priority
- (vii) If a process is executing in its critical section, then no other processes can be executing in their critical section. This condition is expressed as
 - a) mutual exclusion

b) critical exclusion

c) synchronous exclusion

d) asynchronous exclusion

(viii) 1 locess synchronization can be identified at		
a) hardware level	b) software level	
c) both hardware and software level	d) none of the mentioned	
(ix) Determine the two kinds of semaphores		
a) binary & countingc) counting & decimal	b) mutex & counting	
(x) Choose the aim for creating page replacement a	d) decimal & binary	
a) replace pages faster	b) increase the page fault rate	
c) decrease the page fault rate	d) to allocate multiple pages to process	ses
(xi) Segment replacement algorithms are more com		
choose the cause as		
a) Segments are better than pages	b) Pages are better than segments	
c) Segments have variable sizes	d) Segments have fixed sizes	
(xii) The operating system illustrates a table	that keeps track of how many frames	
have been allocated, how many are there, and h		
a) frame c) mapping	b) page	
(xiii) Indicate which module gives control of the CPU	d) memory	
term scheduler?	to the process selected by the short-	
a) dispatcher	b) interrupt	
c) scheduler	d) none of the mentioned	
(xiv) Interpret the purpose of a device driver.	,	
a) To manage multiple I/O devices	b) To translate generic I/O requests int	0
	device-specific commands	
c) To handle interrupts from I/O devices	d) To perform disk scheduling	
(xv) Identify a piece of code that reproduce itself.		
a) Virus	b) Worm	
c) Threat	d) None of the above	
	n.	
Group (Short Answer Ty)		2 v 5_15
(Short Allawer Ty)	se questions)	3 x 5=15
2. Describes Operating System with it features.		(2)
3. Explain the necessary conditions for deadlock to occur.		(3) (3)
4. Discuss Semaphore with an example.		(3)
5. Write the principle of Locality of reference to impro	ve the performance of the virtual	(3)
memory.		` '
6. Criticize the different types of I/O device controllers	(e.g., intelligent, programmed).	(3)
OR		
Predict What information does an I-node typically o	ontain in a file system?	(3)
C		
Group		
(Long Answer Typ	e Questions)	5 x 6=30
7. Explain circular wait and its significance in deadlo	ck formation.	(5)
 Describe the demand paging Explain Different types of Operating System 	2000年1月1日 - 100 -	(5)
and an analysis of the statistic property of		(5)
10. Describe with the help of examples FIFO and LRU, with example reference string. Mention the marite	optical page replacement algorithms	(5)
with example reference string. Mention the merits 11. Construct the mapping between logical and physic	all address	
12. With neat diagram evaluate how logical address is	ar audress.	(5)
The standard flow logical address is	translated into physical address.	(5)

"Memory management keeps track of each and every memory location, regardless of either it is allocated to some process or it is free."—Justify the statement.	(5)
