CBBatch 2023-24

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EXAMINATION: DECEMBER-2023

SEMESTER - I

Sub: Operating System (BCA-23-104/BCAC 23-104)

Date: 30/12/2023		Total Marks: 60	Time: 10.00 am To 12.30 pm		
	 Bold figures to Candidates ar Answers writte Use of scientif 	are compulsory unless and othe to the right of every question are advised to attempt questions en illegibly are likely to be ma fic calculators, Log tables, Mo d labelled diagrams wherever	re the maximum marks for that question. s in order. urked zero. ollier Charts is allowed.		
Q.1.	Fill in the blanks		(5)		
1.	Information in a memory that is no longer valid or wanted is known as				
	a) non-volatile		b) volatile		
	c)surplus		d) garbage		
2.	Relocation bits used by relocating loader are specified (generated) by				
	a) Relocating loader it	tself	b) Linker		
	c) Assembler or transl	lator	d) Macro processor		
3.	The IPC facility provides	atleast two operations	and message.		
	a) receive, send		b) entry, exit		
	c) call, sync		d) copy, delete		
4.	semaphores pro	vide locks for mutual exclusion	ons.		
	a. Binary		b. counting		
	c. Variable		d. None of the above		
5.	process schedul	sses in the system.			
	a. Job queue		b. Ready queue		
	c. Device queues		d. None of the above		
Q.2.	State True/False		(5)		
1.	In disk scheduling, the SS	STF (shortest seek time first) a	algorithm can lead to starvation.		
2.	In Priority Scheduling ea	ch process is provided a fix tii	me to execute it is called a		
	quantum.	on process is provided with the			
3.	•	l (RPC) can be used to call a p	procedure in another process on the		
	same machine.				
4.	The read/write operations	s come in two basic forms, sec	quential and direct.		
5.	The operating system corapplication programs.	ntrols and coordinates the use	of the hardware among the various		
Q.3.	Answer the following (S	Solve any 5)	(10)		
1.	Define starvation.	v - /	(=0)		
2.	List all file attributes.				
3.	List types of OS				
4.					

6. Define Best fit placement strategy.

5. What are semaphores?

Q. 4. Answer the following in detail. (Solve any 6)

(30)

- 1. Explain the following process with neat diagram;
 - a) Multiprocessing b) Multiprogramming.
- 2. Explain the function of Operating System. List the different services of Operating System.
- 3. Explain in detail process control block?
- 4. Differentiate between Long term scheduler and short term scheduler
- 5. What is the process state and explain the various process states of a process.
- 6. Explain the following processes: a) Paging b) Swapping
- 7. Explain the Hierarchical model of file structure.

Q. 5. Answer the following in detail. (Solve any 1)

(10)

1. If the CPU scheduling policy is priority preemptive, calculate the average waiting time and average turnaround time. (Higher number represents higher priority)

Process Id	Arrival time	Burst time	Priority
P1	0	3	2
P2	0	4	3
P3	2	3	4
P4	3	5	5
P5	4	4	5

2. Explain in detail the file system organization and file system mounting.