SRM Institute of Science and Technology
College of Engineering and Technology
School of Computing

Mode of Exam
OFFLINE-SET C

DEPARTMENT OF COMPUTING TECHNOLOGIES

SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamilnadu

Academic Year: 2022-2023 (ODD/EVEN): ODD

Test: CLAT-1 – **Answer Key** **Date: 08-09-2022**

Course Code & Title: 18CSE356T - DOS **Duration: 1 Hour**

Year & Sem: III & V **Max. Marks: 25**

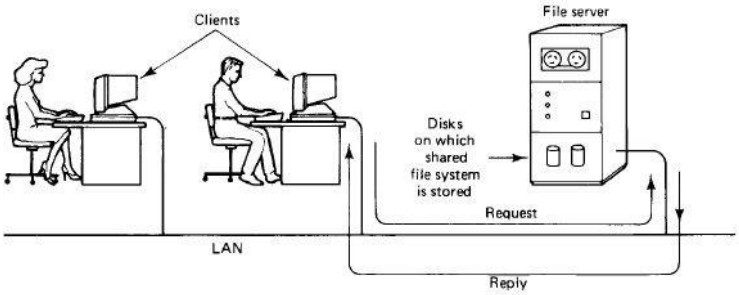
Course Articulation Matrix: ***(to be placed)***

Part – A
(15 x 1 = 15 Marks)

Instructions: Answer all

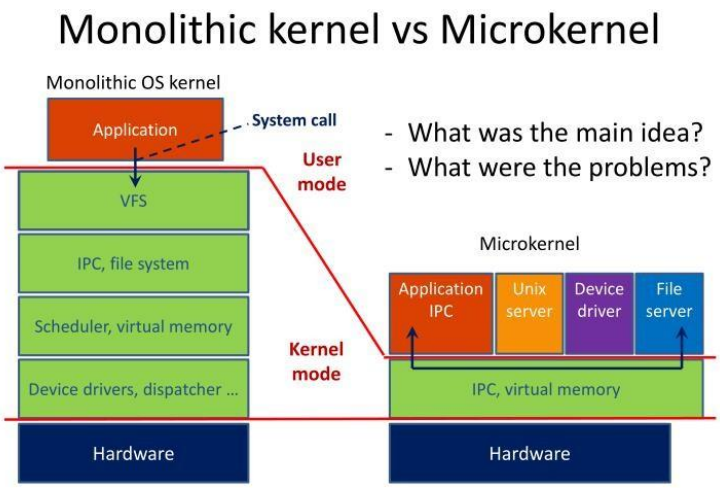
Q. No	Question	Marks	BL	CO	PO	PI Code
1	Distributed system is a collection of independent computers that appears to its users as a _____. a. Multiple systems b. Multiple coherent system c. Single incoherent system **d. Single coherent system**	1	1	1	1	1.6.1*
2	One of the following is not an advantage of DS over isolated PC. a. Device Sharing b. Data Sharing **c. Security** d. Efficiency	1	1	1	1	1.6.1*
3	_____ not only increases availability, but also balances the load between components leading to better performance. a. Distribution **b. Replication** c. Duplication d. Migration	1	2	1	1	1.6.1*
4.	Collection of similar workstations/PCs, closely connected by means of a high-speed LAN a. Grid Computing **b. Cluster Computing** c. Transaction Processing Systems d. Pervasive Computing	1	2	1	1	1.6.1*
5.	_____ property is either an entire transaction happens completely or not at all. If the transaction does happen, it happens as a single indivisible action. a. Consistent b. Isolation **c. Atomic** d. Durability	1	1	1	1	1.6.1*
6.	Sequent, Encore are the examples for a. Switched Multiprocessor b. Switched Multicomputer **c. Bus based Multiprocessor** d. Bus based Multicomputer	1	1	1	1	1.6.1*

7.	In _____ protocol before a processor writes data, other processor cache copies must be invalidated or updated. **a. Snoopy cache** a. Write through b. Write back c. Coherent Cache	1	2	1	1	1.6.1*
8.	To connect n-CPUs and n-Memory modules, _____ cross point switches are required. a. n b.2(n-1) c. $\mathbf{n^2}$ d. m*n	1	3	1	1	1.6.1*
9.	Distributed operating systems consist of: a. Loosely coupled software on a loosely coupled hardware. b. Loosely coupled software on a tightly coupled hardware. **c. Tightly coupled software on a loosely coupled hardware.** d. Tightly coupled software on a tightly coupled hardware.	1	2	1	1	1.6.1*
10.	An experimental file server is up 75% of the time and down for 25% of the time due to bugs. How many times does this file server have to be replicated to give an availability of at least 99 % ? a. 2 b.**4** c. 8 d. 16	1	3	1	1	1.6.1*
11.	Loosely coupled OS allows users and machines to be fundamentally independent of one another and allows interaction wherever necessary. a. **True** b. False	1	2	1	1	1.6.1*
12.	To simplify programming the high-level transaction fork off children that run in parallel with one another, on different machines, this concept is called _____. **a. Nested Transaction** b. Complete Transaction c. Partial Transaction d. Transaction Monitor	1	1	1	1	1.6.1*
13.	A multicomputer with 256 CPUs is organized as 16 × 16 grid. What is the worst case delay (in hops) that a message might have to take? a. 15 b. 10 c. **30** d. 32	1	3	1	1	1.6.1*
14.	Match the following a. Location Transparency — 1. Solution to Coherence property b. Microkernel — 2. Resources can free to move without changing their names c. Multiprocessor — 3. services are kept in separate address space d. Snoopy bus protocol — 4. Share a common memory **i. a- 2, b-3, c- 4, d-1** ii. a- 4, b-1, c- 2, d-3 iii. a- 1, b-4, c- 3, d-2 iv. a- 4, b-3, c- 1, d-2	1	2	1	4	1.6.1*
15.	In tightly coupled multiprocessor system, data rate is _____ loosely	1	2	1	1	1.6.1*

	coupled multiprocessor system. **a. higher than** b. Lower than c. Same us d. almost similar to					
	Part – B **(2 x 5 = 10 Marks)** **Instructions: Answer all**					
1	Brief about Network Operating System. Compare it with DOS. Provides shared, global file system accessible from all the workstations. The file system is supported by one or more machines called file servers. Accept requests from user's programs running on the other (nonserver) machines called ***CLIENTS*** – to read and write files. Each request – examined and executed – reply sent back. Maintains Hierarchial file systems – root directories, subdirectories and files. Workstations can import or mount these filesystems , augmenting their local file systems with those located on server.  **Fig. 1-9.** Two clients and a server in a network operating system.	5	3	1	1	1.6.1*

	Network Operating System	Distributed Operating System
1.	Network Operating System's main objective is to provide the local services to remote client.	Distributed Operating System's main objective is to manage the hardware resources.
2.	In Network Operating System, Communication takes place on the basis of files.	In Distributed Operating System, Communication takes place on the basis of messages and shared memory.
	Network Operating System is more scalable than	Distributed Operating System is less scalable than Network

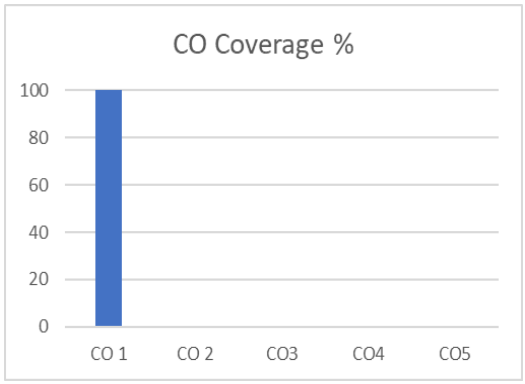
		Operating System.					
	4.	In Network Operating System, fault tolerance is less.	While in Distributed Operating System, fault tolerance is high.				
2	Discuss on Monolithic kernel and Micro kernel and give comparative analysis. Description About Monolithic and Microkernel.			5	3	1	1	1.6.1*

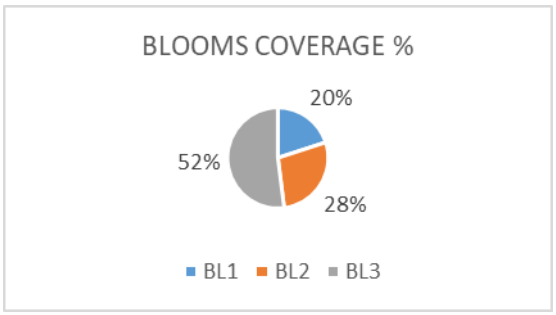


Basis for Comparison	Microkernel	Monolithic Kernel
Size	Microkernel is smaller in size	It is larger than microkernel
Execution	Slow Execution	Fast Execution
Extendible	It is easily extendible	It is hard to extend
Security	If a service crashes, it does effects on working on the microkernel	If a service crashes, the whole system crashes in monolithic kernel.
Code	To write a microkernel more code is required	To write a monolithic kernel less code is required
Example	QNX, Symbian, L4Linux etc.	Linux,BSDs(FreeBSD,OpenBSD,NetBSD)etc.

***Performance Indicators are available separately for Computer Science and Engineering in AICTE examination reforms policy.**

Course Outcome (CO) and Bloom's level (BL) Coverage in Questions





Prepared By

Approved by the Audit Professor/Course Coordinator