VALLIAMMAI ENGNIEERING COLLEGE

SRM Nagar, Kattankulathur – 603203.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Year & Semester	**:**	III and VI
Section	**:**	CSE- 1 & 2
Subject Code	**:**	CS6601
Subject Name	**:**	DISTRIBUTED SYSTEMS
Degree & Branch	**:**	B.E & CSE
Staff in charge	**:**	C.PABITHA and G.SANGEETHA

S.No	QUESTIONS	COMPETENCE	LEVEL
	UNIT -1		
	2 MARK QUESTIONS		
1.	**Define** distributed Systems.	Remember	BTL1
2.	**What** are the examples of Distributed System?	Remember	BTL1
3.	**List** the advantages and disadvantages of Distributed System.	Remember	BTL1
4.	**What** are the challenges in Distributed System?	Remember	BTL1
5	**Show** where Distributed System is applied?	Apply	BTL – 3
6	**Estimate** how distributed system benefits resource sharing?	Understand	BTL – 2
7	**Describe** the main idea of Distributed Systems.	Understand	BTL – 2
8	**Summarize** about resource sharing	Understand	BTL – 2
9	**Discuss** the trends of Distributed System.	Understand	BTL – 2
10	**Compare** Centralized and Distributed System.	Analyze	BTL – 4
11	**Generalize** on Heterogeneity.	Create	BTL – 6
12	**Explain** the consequences faced by the designers in developing distributed systems.	Evaluate	BTL – 5

13	**Explain** briefly on Ubiquitous computing.	Analyze	BTL – 4
14	**Show** how distributed System helps cloud computing	Apply	BTL – 3
15	**Illustrate** the concept of concurrency.	Apply	BTL – 3
16	**What** do you mean by transparency?	Remember	BTL – 1
17	**Develop** the scenario how might the clocks in two computers that are linked by a local network be synchronized without reference to an external time source?	Create	BTL – 6
18	**Rank** the advantages and disadvantages of HTML, URLs and HTTP as core technologies for information browsing?	Evaluate	BTL –5
19	**Classify** the security challenges faced by the distributed systems.	Analyze	BTL – 4
20	**List** the examples of HTTP URL.	Remember	BTL – 1
	16 MARK QUESTIONS		
1	**Design** in detail any two application domain where distributed system is applied.	Create	BTL – 6
2	**Analyze** the challenges in developing a Distributed system and how distributed system overcomes it.	Analyze	BTL – 4
3	**Evaluate t**he trends in distributed system.	Evaluate	BTL – 5
4	**What** are the domain areas in which Distributed System is used?	Remember	BTL – 1
5	**Describe** how to compare and contrast cloud computing with more traditional client-server computing? What is novel about cloud computing as a concept?	Understand	BTL – 2
6	Utilize the World Wide Web as an example to **illustrate** the concept of resource sharing, client and server.	Apply	BTL – 3
7	**List** the three main software components that may fail when a client process invokes a method in a server object, giving an example of a failure in each case. Suggest how the components can be made to tolerate one another's failures.	Remember	BTL – 1
8	(i)**Summarize** in detail about resource sharing and the challenges involved in it. (ii)**Give** the types of local resource that are vulnerable to an attack	Understand	BTL – 2

	by an untrusted program that is downloaded from a remote site and run in a local computer. .		
9	**Label** an example of an HTTP URL. List the main components of an HTTP URL, stating how their boundaries are denoted and illustrating each one from your example. To what extent is an HTTP URL location-transparent?	Remember	BTL – 1
10	(i) **Explain** distributed system and **Analyze** the characteristics of Distributed system. (ii) **Demonstrate** how distributed computing is used as an utility	Analyze Apply	BTL -4 BTL – 3
UNIT -2			
2 MARK QUESTIONS			
1.	**What** are the difficulties and threats in distributed system?	Remember	BTL1
2	**Classify** the generations of distribute system	Analyze	BTL – 4
3	**What** are the entities that communicate in distributed system?	Remember	BTL – 1
4	**List** the types of Communication paradigms.	Remember	BTL – 1
5	**Define** remote invocation	Remember	BTL – 1
6	**What** are the request reply protocols?	Remember	BTL – 1
7	**Design** the roles and responsibilities of distributed systems.	Create	BTL – 6
8	**What** are the middleware layers?	Remember	BTL – 1
9	**Differentiate** marshalling and unmarshalling.	Understand	BTL – 2
10	**Illustrate** the Characteristics and application of Interprocess communication.	Apply	BTL – 3
11	Where remote object reference is **applied**?	Apply	BTL – 3
12	**Evaluate** on overlay networks.	Evaluate	BTL – 5
13	**Formulate** why there is no explicit data typing in CORBA CDR?	Create	BTL – 6
14	**Classify** the main arguments for adopting a super node approach in Skype.	Analyze	BTL – 4
15	**Describ**e Remote procedure call.	Understand	BTL – 2

16	**Classify** the issues for the design of RPC.	Analyze	BTL – 4
17	**Distinguish** RMI and RPC.	Understand	BTL – 2
18	**Discuss** the design issues of RMI.	Understand	BTL – 2
19	**Explain** on shared memory approach.	Evaluate	BTL – 5
20	**Show** how will you make use of message queues	Apply	BTL – 3
	UNIT -2		
	16 MARK QUESTIONS		
1.	**Design** how communication is done between Distributed Objects? Explain with the case study Enterprise Java Beans	Create	BTL – 6
2	(i)What is RMI? How it is implemented? Write notes on JAVA RMI (ii) What is meant by Publish-subscribe systems? Write short notes on it.	Remember Remember	BTL – 1 BTL – 1
3	(i)**Describe** With a neat sketch explain remote procedure call. (ii) **Describ**e explain about group communication. .	Understand Understand	BTL – 2 BTL – 2
4	(i) **Discuss** in detail the physical & architectural model with necessary diagrams. (ii) **Describe** on the fundamental models with example and diagrams.	Understand Understand	BTL - 2 BTL – 2
5	(i)What is the purpose of external data representation and marshaling? (ii) **Examine** about Multicast communication.	Remember Remember	BTL – 1 BTL – 1
6	Explain in detail the following (i) Middleware layers (ii) UDP datagram communication (iii) TCP stream communication. (iv) Characteristics of Inter process communication.	Evaluate	BTL – 5
7	Define Overlay networks. What are the types of overlay networks? Explain in detail.	Remember	BTL – 1

8	(i) **Examine** about the use of request reply protocol. (ii) **Show** how message queues are useful? Explain in brief.	Apply	BTL – 3 BTL – 3
9	i)**Illustrate** what is shared memory? Explain its approaches with example. (ii) **Pointout** the details on from objects to components	Apply Analyze	BTL – 3 BTL – 4
10.	**Analyze** in detail about Message Passing Interface(MPI).	Analyze	BTL - 4
UNIT – III			
TWO MARK QUESTIONS			
1.	**Define** Peer to peer system.	Remember	BTL – 1
2	**Classify** the characteristics of Peer to peer system.	Analyze	BTL – 4
3	**Discuss** how IP and overlay routing for peer-to-peer applications differ from each other?	Understand	BTL -2
4	**Classify** the functional and nonfunctional requirements of peer to peer middle ware systems.	Analyze	BTL -4
5	**Illustrate** what is the use of routing overlay?	Apply	BTL -3
6	Define pastry.	Remember	BTL – 1
7	**Differentiate** Structured and unstructured peer-to-peer systems.	understand	BTL – 2
8	**Classify** the modules available in file system.	Analyze	BTL – 4
9	**Express** in diagram the file attributes record structure.	Understand	BTL – 2
10	What are the requirements of distributed file system?	Remember	BTL -1
11	**Explain** the working of Andrew File system.	Evaluate	BTL -5
12	What do you mean by cache consistency?	Remember	BTL – 1
13	**Give** the design issues of Distributed file system.	understand	BTL – 2
14	What data must the NFS client module hold on behalf of each user-level process?	Remember	BTL -1
15	**Develop** How does AFS deal with the risk that callback messages may be lost?	Create	BTL -6

16	**Define** URI, URL and URN.	Remember	BTL -1
17	**Apply** how will you make use of name space and DNS?	Apply	BTL – 3
18	**Formulate** how caching helps a name service's availability?	Create	BTL – 6
19	**Explain** on LDAP.	Evaluate	BTL – 5
20	**Demonstrate** the use of name cache	Apply	BTL – 3
	16 MARK QUESTIONS		
1.	(i)Define Peer to Peer systems. Explain in detail the working of Peer to Peer Systems. (ii) What is meant by Napster legacy? Explain.	Remember	BTL – 1
2	(i). **Explain** about File system access model and its sharing semantics. (ii) **Explain** on Peer to Peer middleware systems.	Evaluate	BTL – 5
3	**Illustrate w**ith a case study explain about the application of distributed algorithm Routing overlays.(Pastry/Tapestry)	Apply	BTL – 3
4	**Analyze** in detail about Distributed File system, its characteristics and requirements.	Analyze	BTL – 4
5	(i)**Describe** the working of File service architecture. (ii). **Summariz**e the purpose of Andrew File system	Understand	BTL – 2
6	**Formulate** the design and implementation of name services and Domain Name services.	Create	BTL – 6
7	**Discuss** the architecture and server operation of NFS.	Understand	BTL – 2
8	(i)**Illustrate** in brief about LDAP. (ii) **Summarize** the Name space Implementation in brief.	Apply Analyse	BTL – 3 BTL-4
9	List the different approaches to implement the Name Caches and explain them briefly.	Remember	BTL – 1
10	Define and explain the following: i) clocks ii) clock skew iii)Co-ordinate universal time iv) Distributed mutual exclusion.	Remember	BTL – 1

UNIT – 4			
TWO MARK QUESTIONS			
1.	Define clock screw and clock drift.	Remember	BTL – 1
2	**Describe** How will you synchronize physical clock?	Understand	BTL – 2
3	What is Network time protocol?	Remember	BTL – 1
4	**Explain w**hy is computer clock synchronization necessary	Analyze	BTL – 4
5	Define distributed mutual exclusion.	Remember	BTL – 1
6	**Differentiate** Reliable multicast and IP multicast.	Understand	BTL – 2
7	**Explain** on consensus problem.	Evaluate	BTL – 5
8	**Show** what is the use of transaction?	Apply	BTL – 3
9	**Formulate** the ACID properties.	Create	BTL – 6
10	**Illustrate w**hat is concurrency control? Give its use.	Apply	BTL – 3
11	**Show** how will you make use of nested transaction? What are its rules?	Apply	BTL – 3
12	Define deadlock.	Remember	BTL – 1
13	**Discuss w**hat are the advantages and drawbacks of multi version timestamp ordering in comparison with ordinary timestamp ordering?	Understand	BTL – 2
14	**Describe h**ow flat and nested transaction differ from each other?	Understand	BTL – 2
15	**Formulate** the need for atomic commit protocol.	Create	BTL – 6
16	Define the two phase commit protocol.	Remember	BTL – 1
17	**Analyze** the distributed deadlocks.	Analyze	BTL – 4
18	**Analyze** and list the need for transaction status and intentions list entries in a recovery file?	Analyze	BTL – 4
19	Define Linearizability and sequential consistency.	Remember	BTL – 1
20	**Summarize** on coda file system.	Evaluate	BTL – 5
SIXTEEN MARKS			
1.	(i**) Describe** in detail about cristian's and Berkley algorithm for	Remember	BTL – 1

	synchronizing clocks. (ii) **Examine** Briefly about global states.		
2	**Distinguish** and examine the process of active and passive replication model.	Analyze	BTL - 4
3	**Design** Flat transaction and nested transaction with example.	Create	BTL -6
4	(i)**Explain** detail about two phase commit protocol. (ii) **Examine** on atomic commit protocol.	Evaluate Apply	BTL – 4 BLT-3
5	(i) What is the goal of an election algorithm? Explain it detail. (8) (ii) Examine How mutual exclusion is handled in distributed system. (8)	Remember	BTL – 1
6	(i) **Summarize** the internal and external synchronization of Physical clocks.(8) (ii) **Give** the Chandy and Lamports snapshot algorithm for determining the global states of distributed systems. (8)	Understand	BTL – 2
7	(i) **Discuss** the use of NTP in detail. (ii) **Discuss** that Byzantine agreement can be reached for three generals, with one of them faulty, if the generals digitally sign their messages.	Understand	BTL – 2
8	(i**) Examine** a solution to reliable, totally ordered multicast in a synchronous system, using a reliable multicast and a solution to the consensus problem. (ii)**Illustrate** an example execution of the ring-based algorithm to show that processes are not necessarily granted entry to the critical section in happened-before order.	Apply	BTL -3
9	**Summarize** in detail about CODA.	Evaluate	BTL -5
10	(i)**Describe** about Distributed dead locks.	Remember	BTL -1

	(ii) **Examine** Briefly about optimistic concurrency control.		
UNIT – 5			
TWO MARK QUESTIONS			
1.	Define Process Migration.	Remember	BTL – 1
2	Classify the desirable features of good process migration mechanism.	Apply	BTL – 3
3	What are the advantages of process migration?	Remember	BTL – 1
4	Define thread.	Remember	BTL – 1
5	List the advantages of thread.	Remember	BTL – 1
6	What are the sub activities involved in process migration?	Remember	BTL – 1
7	Design how process migration be done in heterogeneous system?	Create	BTL -6
8	List the models for organizing threads.	Remember	BTL – 1
9	Analyze how signal handling is done?.	Analyze	BTL - 4
10	**Explain** how thread scheduling is classified?	Analyze	BTL - 4
11	**Distinguish** static versus dynamic load balancing algorithm.	Understand	BTL -2
12	**Rank** the issues in designing the load balancing algorithm.	Evaluate	BTL -5
13	**Assess** on the issues in designing the load sharing approaches.	Evaluate	BTL -5
14	**Give** the techniques and methodologies for scheduling process of a distributed system.	Understand	BTL – 2
15	**Show** the use of task assignment approach.	Apply	BTL – 3
16	**Discuss** the goals achieved by task assignment approach.	Understand	BTL – 2
17	**Point out** the priority assignment rules.	Analyze	BTL - 4
18	Show how load estimation policies are utilized?	Apply	BTL – 3
19	**Discuss** the migration limiting policies.	Understand	BTL – 2
20	**Generalize** star information exchange policies.	Create	BTL – 6
SIXTEEN MARKS			
1.	**Describe** in detail the features involved in process migration.	Remember	BTL – 1

2	**Evaluate** on the mechanism used in process migration.	Evaluate	BTL -5
3	**Explain** how process migration is implemented in heterogeneous system?	Analyze	BTL – 4
4	**Illustrate** in detail about threads and its process.	Apply	BTL – 3
5	**Formulate** the issues involved in designing a thread package.	Create	BTL- 6
6	**Describe** briefly introduce the Resource management techniques and mechanism.	Remember	BTL – 1
7	(i) **Point out** what are the desirable features of scheduling algorithm? (ii) **Show** how will you find an optimal assignment? Explain with example.	Analyse Apply	BTL – 4 BLT - 3
8	**Discuss** the purpose of task assignment approach.	Understand	BTL – 2
9	**Describe** about the Load Balancing approach in detail.	Remember	BTL – 1
10	**Summarize** in detail how the load is being shared among the resources.	Understand	BTL – 2