SIDDHARTH GROUP OF INSTITUTIONS :: PUTTUR
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QUESTION BANK (DESCRIPTIVE)

Subject with Code : Distributed Systems (16MC824)   **Course** : MCA

Year & Sem: II-MCA & II-Sem   **Regulation:** R16

UNIT – I
Characterization of Distributed System

1	Summarize the characterization of distributed system	12M
2	Explain examples of distributed systems in detail	12M
3	What are the different challenges of distributed system	12M
4	Discuss about system model in detail	12M
5	Explain the principles of networking and internetworking	12M
6	What are the different types of network? Explain each in detail	12M
7	Explain network principles in detail.	12M
8	Discuss about internet protocol.	12M
9	Discuss the following:	
	a. Analyze the different challenges of distributed system.	8M
	b. Why would you design a system as a distributed system?	4M
10	Write note on the following:	
	a. List some advantages of distributed systems	8M
	b. What are the reasons to design a system as a distributed system.	4M
11	Explain in detail about the following:	
	a. WAN	6M
	b. MAN	6M
12	Discuss the networking issues for distributed systems	12M
13	Name and explain the challenges faced while construction of distributed systems	12M

UNIT – II
Inter Process Communication

1	What are the characteristics of inter-process communication? Explain.	12M
2	Explain the following	
	a. Marshalling	6M
	b. External Data Representation	6M
3	Explain about Client-server communication in briefly. What are the primitives used in request-reply protocol?	12M
4	Write about Multicast / Group communication. How Group communication is useful for constructing distributed systems.	12M
5	Discuss RPC semantics in the presence of failures	12M
6	Discuss the API for the Internet Protocols of distributed systems	12M
7	Differentiate between UDP datagram communication TCP stream Communication	12M
8	Discuss the API for the Internet Protocols of distributed systems.	12M
9	Discuss the following:	
	a. How inter-process communication is used in distributed systems	4M
	b. Differentiate TCP stream communication and Client-Server Communication	8M
10	Discuss the parameter passing mechanisms used in RPC. Briefly discuss the Message oriented communication	12M
11	Explain the implementation of RPC in a distributed system	12M

UNIT – III
Operating System Support

1	Explain about Operating System Layer in detail.	12M
2	Discuss about the process and thread in distributed environment.	12M
3	Explain in detail how the operating system protects from illegitimate access.	12M
4	Explain the following:	
	a. What communication primitives does operating system supply for implementing communication in distributed systems?	4M
	b. Which protocols does it support and how open is the communication implementation?	8M
5	What are the steps have to take to make communication as efficient as possible?	12M
6	Explain how operating system architecture is helpful for implementing distributed system?	12M
7	Explain the following:	
	a. How can we improve the performance of invocation in distributed systems?	6M
	b. How does the asynchronous operation can help for invocation of efficient RMI?	6M
8	Discuss about Distributed objects in distributed systems?	12M
9	Explain about CORBA	12M
10	Discuss about distributed objects in detail.	12M

UNIT – IV
Security, Distributed File Systems

1	Explain different security techniques in detail.	12M
2	Discuss the following:	
	a. What is meant by Cryptographic?	4M
	b. Explain symmetric and asymmetric algorithm.	8M
3	Explain digital signature in detail.	12M
4	How the digital signature does more secure for the system? Explain with examples.	12M
5	Explain the following:	
	a. Secret-key algorithm	6M
	b. Public-key algorithm	6M
6	Explain the following:	
	a. Discuss the characteristics of file systems	6M
	b. Discuss the requirement of a distributed file systems	6M
7	Explain the file service architecture.	12M
8	Explain Sun Network file systems in detail.	12M
9	Describe in detail about Andrew File Systems.	12M
10	Describe about the following:	
	a. Name services	4M
	b. Domain name system	4M
	c. Directory services	4M

UNIT – V
Time and Global States, Distributed Transactions

1   Describe the following:

   a. Synchronizing physical Clocks   6M

   b. Logical time and logical clocks   6M

2   Define distributed transactions. Explain about flat and nested distributed transactions.   12M

3   Explain atomic commit protocols in distributed transactions.   12M

4   Explain in detail about concurrency control in distributed systems.   12M

5   Write the following:

   a. Define Deadlock   4M

   b. Explain how deadlocks are handled in distributed systems with neat diagram.   8M

6   Write the following distributed operating systems:

   a. Mach   6M

   b. Chorus   6M

7   Explain the following:

   a. Timestamp ordering concurrency control.   6M

   b. Optimistic concurrency control.   6M

8   Explain the role of a coordinator of a distributed transaction with neat diagram.   12M

9   Explain the following:

   a. Locking.   6M

   b. Timestamp ordering concurrency control.   6M

10 Compare different methods of concurrency control in detail.   12M

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