Code No. : 22966

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD
Accredited by NAAC with A++ Grade
M.Tech. (C.S.E.) II-Semester Main Examinations, August-2023
Distributed Computing

Time: **3 hours**

Max. Marks: **60**

Note: Answer all questions from **Part-A** and any **FIVE** from **Part-B**

Part-A (10× 2 = 20 Marks)

Q. No.	Stem of the question	M	L	CO	PO
1.	Why we use distributed system? Advantages of the distributed system?	2	1	1	1,2,3
2.	Can we be sure that no two computers in the Internet have the same IP addresses? Justify your answer.	2	2	1	2,3
3.	What is the difference between RMI and RPC?	2	1	2	1
4.	Draw the adaptive reference model for networked communication.	2	2	2	1,2,3
5.	Write the important characteristic feature of administrational layer in Name Space Distribution?	2	1	3	1,2
6.	Why is there no explicit data-typing in CORBA CDR? Analyze the reasons?	2	1	3	1
7.	What is an example of fault tolerance in distributed system?	2	1	4	1,2
8.	How are remote objects different from distributed objects?	2	2	4	1
9.	What are the main challenges in distributed computing with respect to security and quality of service?	2	1	5	1
10.	Distinguish between multimedia system and hypermedia system.	2	2	5	1

Part-B (5×8 = 40 Marks)

11. a)	Explain the concept of "Geographical Scalability" and "administrative scalability" in distributed systems. What specific types of applications would be the best examples of each of these types of scalability?	5	3	1	1,2
b)	A client sends a 200 byte request message to a service, which produces a response containing 5000 bytes. Estimate the total time to complete the request in each of the following cases, with the performance assumptions listed below: i)Using connectionless (datagram) communication (for example, UDP)	3	3	1	1,2,3
12. a)	Is Asynchronous RPC is more Preferred than a synchronous RPC? Justify your answer?	4	3	2	1,2
b)	With the help of suitable diagrams explain in the organization of clients and servers in the layered architecture of distributed system.	4	3	2	1,2,3

			M	L	CO	PO
13.	a)	Explain the advantages and disadvantages of various Flat naming approaches.	4	2	3	1,2
	b)	Outline the design of a scheme that uses message retransmissions with IP multicast to overcome the problem of dropped messages. Your scheme should take the following points into account: i)There may be multiple senders; ii)Generally only a small proportion of messages are dropped	4	3	3	2,3
14.	a)	What are the different models that are used by COBRA in trying to provide Event and Notification servers? Use simple use cases to justify the uses of these services?	4	2	4	1,2
	b)	In LDAP each record can be considered as directory entry. The following are the two directory entries in LDAP. Draw the corresponding Directory Information Tree.	4	3	4	1,2
15.	a)	Discuss the QOS parameters used in distributed multimedia streams.	4	2	5	1,3
	b)	What happens when 130MB file is getting stored in HDFS? Why block size is 128MB in HDFS, why not 4KB? Why is a Block in HDFS So Large?	4	3	5	1,2
16.	a)	What are interceptors? To what extent interceptors are dependent on the middleware when they are deployed? Explain.	4	1	1	1,2
	b)	Discuss the following: i) Message-Oriented Transient Communication ii) Stream Oriented Communication	4	2	2	1,2
17.		Answer any *two* of the following:				
	a)	Explain the importance of Multithreaded Services and multithreaded clients in managing the processes.	4	2	3	1,2
	b)	Distinguish between COBRA, EJB and GLOBE.	4	2	4	1,2
	c)	Analyze the importance of the typical infrastructure compounds needed in multimedia applications.	4	3	5	1

M : Marks;   L: Bloom's Taxonomy Level;   CO; Course Outcome;   PO: Programme Outcome

i)	Blooms Taxonomy Level – 1	20%
ii)	Blooms Taxonomy Level – 2	40%
iii)	Blooms Taxonomy Level – 3 & 4	40%

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