Roll No											

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING
MID TERM EXAMINATION - NOV 2023

Semester : Semester V - 2021
Course Code : CSE2052
Course Name : Sem V - CSE2052 - Distributed System
Program : B. TECH

Date : 3-NOV-2023
Time : 11:30AM - 1:00PM
Max Marks : 60
Weightage : 25%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE TEN QUESTIONS **10 X 1=10M**

1. An architecture where clients first communicate the server for data then format and display it to the users, is known as_____

a) a) three-tier architecture (CO1) [Knowledge]
b) b) two-tier architecture
c) c) client/server architecture
d) d) peer-to-peer architecture

2. _____ refers to block size, which is the unit of data sharing and data transfer across the network.

a) a) Packet size (CO1) [Knowledge]
b) b) Sequence number
c) c) Granularity
d) d) IP address

3. Stubs take care of packaging arguments and sending messages. Packaging parameters is called _____.

a) a) Marshalling (CO1) [Knowledge]
b) b) Skeleton
c) c) Receiving
d) d) Process migration

4. A process is _____

a) a) program in main memory (CO1) [Knowledge]

b) b) Program in cache memory

c) c) program in secondary storage

d) d) program in execution

5. An RPC (remote procedure call) is initiated by the _____

a) a) Server (CO1) [Knowledge]

b) b) Client

c) c) Client after server

d) d) A third party

6. Whatapp service *uses* which type of communication-_____

a) a) Transient Synchronous communication (CO2) [Knowledge]

b) b) Transient asynchronous communication

c) c) Persistent synchronous communication

d) d) Persistent asynchronous communication

7. If timestamps of two events are same, then the events are ____

a) a) concurrent (CO2) [Knowledge]

b) b) non-concurrent

c) c) monotonic

d) d) non-monotonic

8. If one site fails in distributed system then _____

a) a) the remaining sites can continue operating (CO2) [Knowledge]

b) b) all the sites will stop working

c) c) directly connected sites will stop working

d) d) none of the mentioned

9. In an _____ distributed system, it is impossible to distinguish between a slow processor and failed processor

a) a) synchronous (CO2) [Knowledge]

b) b) asynchronous

c) c) Two-tier architecture

d) d) Peer-to-Peer architecture

10. Machine that places the request to access the data is generally called as_____

a) a) client machine (CO2) [Knowledge]

b) b) server machine

c) c) database server

d) d) request machine

PART B

ANSWER ALL THE FIVE QUESTIONS **5 X 6 = 30M**

11. List any two resources of hardware and software, which can be shared in distributed systems with example.

(CO1) [Comprehension]

12. Why are distributed operating systems more difficult to design than operating systems for centralized time-sharing systems?

(CO1) [Comprehension]

13. Narrate design and implementation issues of Distributed Shared Memory in detail.

(CO2) [Comprehension]

14. What is layering in networking? and explain about reliable communication.

(CO2) [Comprehension]

15. What is the difference between RMI and RPC?

(CO2) [Comprehension]

PART C

ANSWER ALL THE TWO QUESTIONS **2 X 10 = 20M**

16. A distributed operating system makes a collection of networked machines to act like a virtual uniprocessor.

a) What are the main advantages of this virtual-machine architecture for a user?

b) What issues are important for a distributed operating system designer in achieving this goal?

(CO1) [Application]

17. a) Discuss on Distributed Shared Memory with suitable illustrations.

b) Consider a simple server that carries out client requests without accessing other servers. Explain why it is generally not possible to set a limit on the time taken by a server to respond to a client request. What should the server do, to execute requests within a bounded time.

(CO2) [Application]