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BCACAC 315

**Credit Based V Semester B.C.A. Degree Examination, April 2021
(Semester Scheme) (Common to All Batches)
DISTRIBUTED COMPUTING**

Time : 3 Hours

Max. Marks : 100

Instruction : Answer **any ten** questions from Part – A and **one full** question from each Unit of Part – B.

PART – A

1. a) Differentiate network service and network applications. **(10×2=20)**
b) Define parallel computing.
c) Mention four primitive operations of IPC.
d) What is message passing ?
e) What are UDP and TCP ? Why they are used ?
f) What is JSSE ?
g) What is echo protocol ?
h) Write the diagram of one-to one and group communication.
i) What are the packages available that provide reliable multicast API ?
j) List any four well known toolkits for distributed object systems.
k) What is object registry ?
l) What is stub downloading ?

PART – B

Unit – I

2. a) Explain strengths and weaknesses of distributed computing.
b) Write a note on synchronous send and synchronous receive.
c) Explain how you can achieve concurrent programming in a process and also explain its two types. **(8+6+6)**

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3. a) Write and explain different forms of computing.
- b) Write the architecture of distributed applications and explain them briefly.
- c) Explain with a diagram IPv4 address scheme. (8+6+6)

Unit – II

4. a) What do you mean by distributed object paradigms ? Explain RMI and ORB.
 - b) What do you mean by peer-to-peer paradigm ? Explain.
 - c) Write a note on secure socket API. (8+6+6)
5. a) What is message system paradigm ? Explain its two types.
 - b) What are connectionless and connection oriented datagram sockets ? Explain with diagrams.
 - c) What do you mean by mobile agent paradigm ? Explain. (8+6+6)

Unit – III

6. a) What are stateful servers ? What are two states of information ?
 - b) Explain reliable multicast API.
 - c) Write a note on protocol for a service and locating the service. (8+6+6)
7. a) Draw the diagram of execution flow of the server process and explain service session.
 - b) Explain FIFO reliable multicasting.
 - c) Write a note on an archetypal multicast API. (8+6+6)

Unit – IV

8. a) Write the java RMI Client-side and Server-side architecture.
 - b) Draw the diagram for file placements for an RMI application.
 - c) What do you mean by stub and skeleton generation in java RMI ? Explain.
 - d) With a time event diagram explain how interaction between RMI stub and RMI skeleton. (6+5+5+4)
9. a) Explain : i) remote interface ii) remote interface implementation.
 - b) What are the steps involved in testing and debugging of RMI application ?
 - c) With diagram explain polling and callbacks in RMI.
 - d) Write a note on RMI security manager. (5+5+5+5)