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BCACAC 315

V Semester B.C.A. Degree Examination, October/November 2019

(Credit Based Semester Scheme)

(Common to All Batches)

Distributed Computing

Time : 3 Hours]

[Max. Marks : 100

Note : Answer any TEN questions from Part-A and ONE full question from each Unit in Part-B.

PART - A

1. Answer **any ten** of the following : **(10 × 2 = 20)**

- (a) What are network services and network applications? Give example.
- (b) What is the difference between program and process?
- (c) Write the general format of URL.
- (d) What is Peer to Peer Communication?
- (e) Expand :
 - (i) ORB
 - (ii) RPC
- (f) List two transport layer protocol used in datagram socket API.
- (g) What is echo protocol?
- (h) Define Unicast and Broadcast communication.
- (i) What is reliable multicasting?
- (j) What are Local objects and Remote objects?
- (k) What is meant by Polling?
- (l) List the four well known toolkits for distributed object systems.

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PART - B

UNIT - I

2. (a) Explain the strengths and weaknesses of distributed computing.
(b) Write the simplified state transition diagram of a process and explain it. Also write the difference between program and process.
(c) Explain synchronous send and synchronous receive operation for event synchronization, with a neat diagram. **(7 + 6 + 7)**
3. (a) Explain different forms of computing.
(b) How can we achieve concurrent programming in a process? Explain its two types.
(c) Write a note on archetypal IPC program interface. Explain with diagram the inter process communication in basic HTTP. **(6 + 7 + 7)**

UNIT - II

4. (a) Write a note on Collaborative application paradigm. Explain its two types.
(b) Write a note on trade-offs of distributed computing paradigms.
(c) Explain the network service paradigm and mobile agent paradigm with neat diagrams. **(6 + 6 + 8)**
5. (a) Write a note on Secure socket API.
(b) Explain the message system paradigm.
(c) Explain stream-mode socket API with the diagram and write the program flow. **(6 + 6 + 8)**

UNIT - III

6. (a) Explain the different operations involved in an archetypal multicast API.
(b) Write a note on Global state and Session state information.
(c) Explain the following :
(i) FIFO Multicasting
(ii) Causal - Ordering Multicasting
(iii) Atomic Order Multicasting. **(5 + 6 + 9)**



7. (a) Explain the mechanism for testing a network service.
(b) Write a note on IP Multicast Addresses.
(c) Briefly explain any three client - server paradigm issues. **(5 + 6 + 9)**

UNIT - IV

8. (a) Write a note on RMI security manager.
(b) With a neat diagram explain stub downloading.
(c) Explain the java RMI architecture with a neat diagram. **(5 + 6 + 9)**
9. (a) Write the difference between RMI and socket API.
(b) With a neat diagram explain polling and callback in RMI.
(c) Write the algorithms for developing the server side and client side software when building an RMI application with client call back. **(6 + 6 + 8)**