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63/2 (SEM-4) CSIT 4.1

2024

**COMPUTER SCIENCE AND
TECHNOLOGY**

Paper : CSIT 4.1

(*Distributed System*)

Full Marks : 80

Pass Marks : 32

Time : Three hours

***The figures in the margin indicate
full marks for the questions.***

1. Answer the following : **(any five)** $2 \times 5 = 10$
 - (a) Define distributed system.
 - (b) What are the advantages of distributed systems ?
 - (c) What are the multiprocessor and multicomputer systems ?
 - (d) What is access point ?
 - (e) What is global state ?

Contd.

- (f) What is address space ?
2. Answer the following : **(any ten)** $3 \times 10 = 30$
- (a) What is meant by group communication ?
 - (b) Differentiate between synchronous and asynchronous communication.
 - (c) Illustrate the architectures for multi-thread server.
 - (d) Explain Names, Identifiers, and Addresses.
 - (e) Differentiate between weak mobility and strong mobility.
 - (f) Explain persistence and transient communication.
 - (g) Differentiate between process and thread.
 - (h) Define data-centric consistency model.
 - (i) What are the *two* reasons of replication of data ?
 - (j) Explain the parameter passing approaches in distributed communication.

- (k) Define multicast communication.
- (l) Explain the failure models in brief.

3. Explain the various design goals for distributed system with example. 10
4. What do you mean by code migration ? Explain the reasons for migrating code and also explain models of code migration. 10
5. Explain why election algorithm is used. Explain in brief about bully election algorithm, 10

Or

Make a design of distributed system for administration of Bodoland University by considering all the goals.

6. Write short notes on **(any two)**: 10
- (a) Middleware
 - (b) Distributed commit approach
 - (c) Check pointing