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Name of Examination : **Summer 2021** - (Preview)

Course Code & Course Name : **CO451 - Distributed Operating System**

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Maximum Marks : **60**

Duration : **3 Hrs**

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Answer Key Submission Type: No marking scheme and solution

Instructions:

1. All questions are compulsory.
2. Illustrate your answer with suitable figures/sketches wherever necessary.
3. Assume suitable additional data; if required.
4. Use of logarithmic table, drawing instruments and non programmable calculators is allowed.
5. Figures to the right indicate full marks.

1) Solve any two.

- A) List and Explain steps of Process migration with diagram. [5]
- B) Explain the suitable mechanism for implementing each of the following types of IPC Semantics [5]
 - i) Last one
 - ii) exactly once
 - iii) At least once
- C) Explain design issues of Distributed shared memory [5]

2) Solve any two.

- A) What is a distributed Operating System and distributed Computing system? Why are distributed Computing Systems gaining Popularity? [5]
- B) Which are the desirable features of a good message passing system? [5]

Differentiate between monolithic and microkernel model used for designing distributed operating system.
- C) Explain RPC Mechanism in details [5]

3) Solve any two.

- A) Explain following consistency models: [3]
 - i) strict consistency
 - ii) Sequential Consistency
- B) Explain the main difference between a **Network operating system** and **distributed operating system**. [3]
- C) With diagram explain workstation and workstation server model [3]

4) Solve any two.

- A) Explain any one non-token based distributed mutual exclusion algorithm? [5]
- B) Explain process migration in details with diagram. [5]
- C) Write note on : i) 4.3 BSD UNIX IPC Mechanism [5]
 - ii) SUN RPC
 - iii) DCE Distributed file Service

5) Solve all

- A) Explain issues in designing of Load balancing and Load sharing algorithm [6]
- B) Explain desirable features of good global scheduling algorithm. [6]

What is idempotent Operation? Which of the following operations idempotent. Give justification for each.

 - i) read_record(filename, record_num)
 - ii) read_next_rec(filename)
 - iii) seek (filename, position)
 - iv) add(int1, int2)

6) Solve all

- A) Write note on following: [6]
 - i) Buffering
 - ii) Multidatagram Messages
 - iii) Encoding and decoding of messages
- B) Explain Consistency models, Replacement strategy and thrashing in brief [6]

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