



## GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

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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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