Code No: 155AB **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, January/February - 2023

ADVANCED OPERATING SYSTEMS

(Common to CSE, IT)

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	What is a distributed operating system?	[2]
b)	List the advantages and disadvantages of distributed operating systems.	[3]
c)	What is meant by data migration?	[2]
d)	Write a short note on distributed mutual exclusion.	[3]
e)	What is distributed deadlock?	[2]
f)	Discuss the various issues of deadlock detection in the distributed systems.	[3]
g)	What is multiprocessor?	[2]
h)	What is the difference between process and thread?	[3]
i)	List the advantages of using distributed shared memory.	[2]
j)	Write the key issues in task migration.	[3]

PART – B

(50 Marks)

2.a)	With a neat sketch, explain workstation-server model.	
b)	Differentiate between blocking and non-blocking primitives.	[6+4]
	OR	
3.a)	Describe the issues in distributed operating systems.	
b)	Write short notes on RPC.	[5+5]
4.	Write the Ricart-Agrawala algorithm and illustrate with an example.	[10]
	OR	
5.	Write Raymond's Heuristic algorithm and illustrate with an example.	[10]
6.	Classify the various hierarchical deadlock detection algorithms and briefly explain them.	[10]
	OR	
7.	Classify the various centralized deadlock detection algorithms and briefly explain them.	[10]

8.a) Mention and brief the various design issues of distributed file systems.

b) Draw and briefly explain architecture for distributed file systems. [5+5]

OR

9.a) Describe the structure of multiprocessor operating system.

b) Give a brief summary on process synchronization. [5+5]

10. Explain the following terms:
a) Architecture of a distributed shared memory
b) Requirements for load distributing. [5+5]

OR

11.a) Discuss the design issues of distributed shared memory.

b) Write migration algorithm for implementing distributed shared memory. [5+5]

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