

# SARDAR PATEL INSTITUTE OF TECHNOLOGY

MUNSHI NAGAR, ANDHERI (WEST), MUMBAI – 400 058, India  
(Autonomous College Affiliated to University of Mumbai)

## Synoptic

### End Semester Examination

Max. Marks: 60

Class: TYMCA

Course Code: MCA51

Subject: Distributed Computing and Cloud Computing

Duration: 3 hr

Semester: V

Date: 25/11/19

Time: 10.00 to 1.00 pm

Q. No.	Questions	Max. Marks	CO
Q.1 A	How would you construct the model of blocking and nonblocking types of IPC. which is easier to implement and why ? Blocking model [2mks] Nonblocking model [2mks] Explanation of each [2mks]	6	1
B	Why do some distributed applications make use of stateless server inspite of the fact that stateful servers provide easier programming paradigm and are typically more efficient than stateless servers ? Stateful Server [2mks] Stateless Server[2mks] Diagrammatic Explanation [2mks]	6	1
Q.2 A	Why election algorithms are normally needed in distributed systems? A LAN based distributed system has a broadcast facility. Suggest and elaborate simple election algorithm for use in this system. Bully/Ring algorithm[ 3mks] Diagrammatic explanation[3mks]	6	2
B	How the shared memory consistency can be maintained in distributed systems with the help of consistency models? Strict ,sequential, Casual, weak , release, PRAM, processor List [ 1 mark] Explanation [2mks] Example [3marks]	6	2
Q.3 A	How would you Categorize different Thread Models in distributed Computing ?	6	3





**BHARATIYA VIDYA BHAVAN'S**

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	Dispatcher –worker model[2mks] Pipeline model [2mks] Team model[2mks] Diagrammatic explanation required																																																			
	OR																																																			
	For the given data find out the the following and Conclude your answer  1.Serial Assignment Execution Cost & Communication cost & Total cost  2.Optimal Assignment Execution Cost & Communication cost & Total cost  Intertask Communication cost <table><tr><td></td><td>t1</td><td>t2</td><td>t3</td><td>t4</td><td>t5</td><td>t6</td></tr><tr><td>t1</td><td>0</td><td>6</td><td>4</td><td>0</td><td>0</td><td>12</td></tr><tr><td>t2</td><td>6</td><td>0</td><td>8</td><td>12</td><td>3</td><td>0</td></tr><tr><td>t3</td><td>4</td><td>8</td><td>0</td><td>0</td><td>11</td><td>0</td></tr><tr><td>t4</td><td>0</td><td>12</td><td>0</td><td>0</td><td>5</td><td>0</td></tr><tr><td>t5</td><td>0</td><td>3</td><td>11</td><td>5</td><td>0</td><td>0</td></tr><tr><td>t6</td><td>12</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table>  Execution Cost  <b>Serial Assignment</b> : t1 ->n1 , t2 ->n1, t3 ->n1, t4 ->n2, t5 ->n2, t6 ->n2.  <b>Optimal Assignment</b> : t1 ->n1, t2 ->n1, t3 ->n1, t4 ->n1, t5 ->n1, t6 ->n2  Formulate Execution cost [2mks]  Formulate communication cost [2mks]  Formulate Total cost [2mks]		t1	t2	t3	t4	t5	t6	t1	0	6	4	0	0	12	t2	6	0	8	12	3	0	t3	4	8	0	0	11	0	t4	0	12	0	0	5	0	t5	0	3	11	5	0	0	t6	12	0	0	0	0	0	6	3
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t3	4	8	0	0	11	0																																														
t4	0	12	0	0	5	0																																														
t5	0	3	11	5	0	0																																														
t6	12	0	0	0	0	0																																														
B	What is an immutable file ? Can a file system be designed to function correctly by using only immutable files ? If no, explain why. If yes, explain how basic operations (create,read,delete,write) can be performed	6	4																																																	



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	in this file system for shared files ? Mutable files and Immutable files explanation is needed [2mks] Justification with respect to context [4mks]		
Q.4A	Compare Public Cloud and Private Cloud Model Public Cloud [3mks] Private cloud [3mks]	6	4
B	Summarize XaaS in your own words Define[ 1mark] Explanation [3mks] Example [2 mk]	6	4
	OR		
	Illustrate virtualization in cloud computing. Explanation[4mks] Types[2mks]	6	4
Q.5A	How would you compare Cloud Computing and Grid computing ? Cloud Computing[3mks] Grid Computing [3mks]	6	4
B	Outline the main characteristics of Cloud computing Each point carries 1 marks for characteristics Resources Pooling. ... On-Demand Self-Service. ... Easy Maintenance. ... Large Network Access. ... Availability. ... Automatic System. ... Economical. ... Security.	6	4