

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER – VIII. EXAMINATION – WINTER 2016

Subject Code: 180701

Date: 21/10/2016

Subject Name: Distributed Systems

Time: 02:30 PM to 05:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define distributed system. What is main motivation of distributed system? Explain advantages and disadvantages of distributed systems. **07**
(b) [1] Compare: Monolithic kernel and Microkernel **07**
[2] Compare: Network Operating System and Distributed Operating System
- Q.2** (a) List out various distributed computing model. Explain workstation server model and processor pool model. **07**
(b) Draw and explain ATM cell format. **07**
- OR**
- (b) Explain versatile message transport protocol. **07**
- Q.3** (a) What is an IPC? Explain IPC message format. Also list out issues to be consider for the design of IPC protocol based message passing system. **07**
(b) Explain construction a DFS spanning tree for a specified root. **07**
- OR**
- Q.3** (a) Explain algorithm for constructing DFS spanning tree without a specified root. **07**
(b) Draw and explain general RMI architecture. Also write advantages of RMI. **07**
- Q.4** (a) What is deadlock? List out four necessary and sufficient conditions for a deadlock occur. Explain various deadlock preventions strategies. **07**
(b) How problem is specified using formal model? Explain asynchronous point to point message passing and asynchronous broadcast. **07**
- OR**
- Q.4** (a) What is physical clock? What is logical clock? Explain how to implement logical clock in distributed system? **07**
(b) How object locating is carried out in distributed system? Discuss different object locating mechanisms. **07**
- Q.5** (a) Explain name space and name server. **07**
(b) Which are the different types of process scheduling techniques? Explain desirable features for good scheduling algorithm. **07**
- OR**
- Q.5** (a) What is thread? Compare user level thread with kernel level thread. **07**
(b) What is coherence protocol? Explain how the MRMW protocol is implemented. **07**
