

Time: 3 Hours

Marks: 80

- N.B.**
1. Question no.1 is compulsory.
 2. Attempt any 3 questions out of remaining 5 questions.
 3. Figures to the right indicate full marks.
 4. Assume suitable data wherever necessary.

- Q.1**
- a) Compare NOS and DOS [5]
 - b) What is CORBA and explain types of method invocation in CORBA. [5]
 - c) What are Roles in EJB? [5]
 - d) Explain Service Oriented Architecture (SOA) lifecycle with a diagram. [5]
- Q.2**
- a) Define Happened- Before Relationship. Explain implementation of logical clocks with an example. [10]
 - b) Describe various transparencies in distributed system. [10]
- Q.3**
- a) Explain migration in Heterogeneous system. [10]
 - b) Describe the need for coordinator in distributed system. Demonstrate the working of Election algorithm. [10]
- Q.4**
- a) Describe desirable features of a good message passing system. [10]
 - b) Describe different distributed computing models. [10]
- Q.5**
- a) Explain client centric consistency model in distributed system. [10]
 - b) Explain need of deadlock detection algorithm. Explain probe based distributed deadlock detection algorithm [10]
- Q.6** Write short note on (Any two) [20]
- a) Group communication
 - b) .NET architecture
 - c) RMI Execution