B.E. (Computer Engineering)
DISTRIBUTED OPERATING SYSTEMS
(2008 Pattern) (Semester-II)

Time : 3 Hours]   *[Max. Marks : 100*

Instructions to the candidates:
1) *Answers to the two sections should be written in separate answer books.*
2) *Answer any three questions from each section.*
3) *Neat diagrams must be drawn wherever necessary.*
4) *Figures to the right side indicate full marks.*
5) *Use of Calculator is allowed.*
6) *Assume Suitable data if necessary.*

SECTION-I

Q1) a) What is Distributed Computing Environment? List & explain goals and components of Distributed Computing Environment. **[8]**

b) List and explain desirable features of good message passing system. **[8]**

OR

Q2) a) Draw & explain distributed computing system models. **[8]**

b) List, explain & compare protocols for Distributed System. **[8]**

Q3) a) Define Distributed System and explain following: **[10]**
  i) Advantages.
  ii) Communication primitives.

b) Discuss inherent limitations of Distributed Systems and their impact on the design and development of Distributed Systems with the help of example. **[8]**

OR

Q4) a) Explain issues in distributed operating system. **[10]**

b) Define with respect to Lamport's logical clock- **[8]**
  i) Happened before relation.
  ii) Concurrent events with example.
  iii) Logical clock.
  iv) Limitation with example.

P.T.O.

Q5) a) Explain Path-Pushing algorithm and Edge-Chasing algorithm. **[8]**

b) List and explain criterions of system model under which agreement problems have been studied. **[8]**

OR

Q6) a) Explain Ricart-Agrawala algorithm of distributed mutual exclusion. **[8]**

b) Explain: **[8]**
   i) Issues in deadlock detection & resolution.
   ii) Control organization for distributed deadlock detection.

SECTION-II

Q7) a) List and explain two important goals of distributed file system. Draw & explain architecture & typical data access actions in distributed file system. **[10]**

b) List and explain advantages of distributed shared memory. **[8]**

OR

Q8) a) Explain algorithms for implementing DSM. **[10]**

b) Explain components of a load distributing algorithm. **[8]**

Q9) a) Explain classification of failures and define following- **[8]**
   i) Failure.
   ii) Erroneous state.
   iii) Fault.
   iv) Error.

b) Explain non-blocking commit protocol for single site failure. **[8]**

OR

Q10) a) Explain basic approaches of backward-error recovery. **[8]**

b) Explain design principles for secure systems. **[8]**

Q11) a) Explain Grid Middleware & Grid Architecture. **[8]**

b) What is service oriented grid? Explain with diagram. **[8]**

OR

Q12) a) What is OptorSim? Draw & explain architecture of OptorSim. **[8]**

b) Explain with respect to SOA: **[8]**
   i) Service & its characteristics.
   ii) Service interaction cycle.

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