B.E. (Computer Engineering) Eighth Semester (C.B.S.)

Distributed Systems & Grid Computing

P. Pages : 2 **NRT/KS/19/3711**

Time : Three Hours * 0 8 0 6 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) What is distributed system? Explain the different characteristics of distributed system. **6**

b) Define global clock? What are the possibilities of large delay in the network & how it is adjusted to produce global clock. **7**

OR

2. a) Define issues in distributed system. **7**
i) Transparency ii) Scalability
iii) Security iv) Resource management

b) Write short notes on: **6**
i) "absence of global clock".
ii) "Local state & global state"

3. a) Explain the Lamport's logical clock in details with the help of example. **7**

b) Define : **7**
i) Global states. ii) Events.
iii) Process. iv) States.
v) Critical section.

OR

4. a) What is distributed mutual exclusion? Explain any one algorithm of distributed token based approach with the help of example. **7**

b) What is synchronized and asynchronized clocks? Discuss about different performance metrics which measured in mutual exclusion. **7**

5. a) Discuss about different design issues of distributed file system. **6**

b) What are the different ways of mounting of file system. Explain each of them. **7**

OR

6. a) Explain the CORBA architecture in details & compare with CODA system. **7**

b) Discuss different challenges & advantages of distributed of distributed shared memory. **6**

7. a) What are the different protocols of grid computing? Explain any one in details. **6**

b) Write short notes on. **7**
i) Desktop grid
ii) Clusters grid
iii) HPC grid

OR

8. a) Explain grid computing architecture in details. **7**

b) What are the advantages of grid computing in real time applications **6**

9. a) Discuss about different message passing operations. **6**

b) Explain point-to-point communication exist in MPI. Explain with example. **7**

OR

10. a) Write short notes on. **6**
i) Error Handling in MPI.
ii) Data types in MPI.

b) Explain how the collective communication services supports in message passing interface & in what different applications where it is demanded. **7**

11. a) Explain architecture of cloud computing. **6**

b) Write short notes on deployment model of cloud computing. **8**
i) Public cloud. ii) Private cloud.
iii) Hybrid cloud. iv) Community cloud.

OR

12. a) Explain different services models of cloud computing. **8**

b) Discuss about current application of utilization of cloud computing with the help of example. **6**

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