B.E. (Information Technology) Seventh Semester (C.B.S.)

Elective - II : Cluster & Grid Computing

P. Pages : 2

Time : Three Hours

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Max. Marks : 80

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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. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Differentiate between Grid computing and cluster computing. **7**

b) Explain architecture of a cluster. **7**

OR

2. Define the following terms. **14**
i) Data center. ii) Meta computing.
iii) The computational Grid. iv) Single system image (SSI)

3. a) What are the different early cluster architectures? **7**

b) What are the different cluster middleware design objectives? **6**

OR

4. a) What is process scheduling? Explain job management system (JMS) and Resource management system (RMS) in brief. **9**

b) What are the various issues in distributed memory system? **4**

5. a) What are the hardware and software components of a typical cluster? **6**

b) Explain the architecture of a Grid. **7**

OR

6. What are the Grid related standard bodies. Explain the working of each of them. **13**

7. a) Elaborate various web services in brief. **7**

b) What are the various traditional paradigms for distributed computing? **7**

OR

8. Discuss the following. **14**
i) OGSA ii) WSRF

9. Discuss the following terms related to Autonomic Computing. **13**
i) Overview.
ii) Features.
iii) Autonomic Grid services.

OR

10. a) Summarize web ontology languages. **5**

b) Define Grid, Semantic Grid, semantic web and metadata. **8**

11. a) What is Grid security ? What are the authorization modes in Grid security Infrastructure (GSI) **9**

b) What are the possible vulnerabilities. **4**

OR

12. a) Explain Grid monitoring architecture in brief. **7**

b) What are the scheduling paradigms in Grid scheduling. **6**

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