B.TECH.
THEORY EXAMINATION (SEM–VIII) 2016-17
CLUSTER COMPUTING

Time : 3 Hours   *Max. Marks : 100*

Note : *Be precise in your answer. In case of numerical problem assume data wherever not provided.*

SECTION – A

1. **Explain the following:**   **10 x 2 = 20**
- **(a)** Define the term distributed system.
- **(b)** List some of the examples of distributed system.
- **(c)** Mention the various categories of Clusters?
- **(d)** What is cluster middleware?
- **(e)** Why is load sharing required in a cluster?
- **(f)** Distinguish between the central grid approach and the distributed grid computing.
- **(g)** What is Grid Computing?
- **(h)** List the requirements of resource sharing
- **(i)** What are the benefits of database integration with the grid?
- **(j)** How does OGSA perform resource distribution with SOA?

SECTION – B

2. **Attempt any five parts of the following questions:**   **5 x 10 = 50**
- **(a)** Explain how resource sharing is done in the web
- **(b)** What are the functionalities of the middleware in a cluster? Discuss.
- **(c)** Explain the Cluster Architecture in detail.
- **(d)** Contribute your comments on granularity and page replacement issues in the design of distributed shared memory systems.
- **(e)** Explain shared nothing and shared storage architecture.
- **(f)** Illustrate in detail about the various layers in grid architecture.
- **(g)** Write about Authorization and Delegation in Grids?
- **(h)** Explain WSRF Specifications in detail.

SECTION – C

Attempt any two parts of the following questions: **2 x 15 = 30**
3. Identify the challenges of distributed system. Discuss in detail.
4. Explain the characterization of grid and its standard bodies.
5. **Write short notes on:**
  - (i) Beowulf
  - (ii) COMPaS
  - (iii) NanOS
  - (iv) PARAM