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B.TECH.

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

Time : 3 Hours

Max. Marks : 100

 $10 \ge 2 = 20$

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

SECTION – A

1. Explain the following:

- (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:

- (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:

- **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

 $2 \ge 15 = 30$

 $5 \ge 10 = 50$