

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – III • EXAMINATION – WINTER • 2013

Subject code: 735102

Date: 26-11-2013

Subject Name: Data Center Management

Time: 10.30 am – 01.00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) i. What is NAS? [2]
ii. What is SAN? [2]
iii. Define throughput. [2]
iv. What is SNMP? [2]
v. What is Data Center Power Distribution Units? [2]
vi. What is Port Density? [2]
vii. What is vertical scaling in server consolidation? [2]
- Q.2** (a) Discuss server capacity planning. Explain three phases of server capacity planning. [7]
(b) Explain in detail quality of service management. Explain single point of failure. Explain exception management in a Data Centre. [7]
- Q.3** (a) Explain Point Load and Static Load in detail. Give an example for each type of load. [7]
(b) What is Load balancing? What are the advantages for Load balancing? Discuss the various types of load balancing techniques. [7]
- Q.4** (a) Explain following points in detail: [7]
i. What is an aisle? Why do we need aisle?
ii. What is a plenum? Why do we need a plenum?
iii. Types of tiles in a Data Centre and where they are used / placed inside a data center?
(b) Discuss various points that need to be considered when selecting a geographical location for a data centre. [7]
- Q.5** (a) Discuss the various approaches to network consolidation in a data center. [7]
(b) What is HVAC? Why do we need it? How do we measure the cooling requirements? [7]
- Q.6** (a) Explain storage consolidation and various approach to network consolidation in a data centre. [7]
(b) Explain in detail, what is benchmarking and the objectives for benchmarking. Discuss the various system performance aspects related to benchmarking. [7]
- Q.7** (a) What is POD? Discuss the various components of a POD rack. [7]
(b) Calculate the total cable requirement for the following scenario: [7]
• A data center with 100 servers
• Each server is connected to two storage devices, using two fiber cables (for performance and redundancy)
• Each storage device is also connected to the administrative network using CAT5 cables (for console-based storage administration)
• Each server has redundant connections to the production network
