

- N. B.: (1) All questions are compulsory.
(2) Make suitable assumptions wherever necessary and state the assumptions made.
(3) Answers to the same question must be written together.
(4) Numbers to the right indicate marks.
(5) Draw neat labelled diagrams wherever necessary.
(6) Use of Non-programmable calculators is allowed.

Q1. Attempt the three of the following.

15 Marks

- Explain the Evolution of Storage architecture.
- Explain the key characteristics of Data Center.
- Write about memory virtualization with the help of diagram.
- Explain SCSI and Fiber Channel used for communication.
- How data gets stored on disk. Explain Logical Block Addressing.

Q2. Attempt the three of the following.

15 Marks

- Explain the Command Queuing Technique used in disk.
- Write about the striping and mirroring techniques of RAID.
- How Cache enhances the performance of IO operations.
- Explain the Concept of LUN.
- Write note on Physical Storage device Hard Disk .

Q3. Attempt three of the following.

15 marks

- Explain the Midrange Storage System.
- What is SAN? Explain its components.
- Explain Fiber channel protocol architecture.
- What is zoning? Explain types of zoning.
- Discuss the fiber channel addressing

Q4. Attempt three of the following.

15 marks

- What is ISCSI? Explain the topologies of ICSI connectivity.
- Explain the error handling mechanism used in ICSI.
- Discuss the FCIP performance and security.
- What is NAS? Compare general-purpose servers with NAS devices
- Explain the factors affecting the NAS performance.

Q5. Attempt three of the following.

15 marks

- Write benefits of object based storage.
- Write applications of Content Addressed storage.
- Explain Unified storage system.
- How to measure information availability? Explain MTBF and MTTR.
- What is the need for having a backup system in an organization? Explain topologies used in backup system.