BE12-R4: INFORMATION STORAGE & MANAGEMENT

NOTE:

1. **Answer question 1 and any FOUR from questions 2 to 7.**
2. **Parts of the same question should be answered together and in the same sequence.**

Time: 3 Hours **Total Marks: 100**

1.

a) NAS devices support multiple file service protocols to handle file I/O requests to a remote file system. Write down protocols supported by NAS.

b) Information Life Cycle Management is proactive strategy to manage data. What are the benefits of ILCM?

c) Draw protocol stack for Fiber channel. What are the key advantages of fiber channel protocol?

d) What is the importance of Zoning in SAN? Explain in brief: Port Zoning, WWN Zoning.

e) What are the differences between software RAID and Hardware RAID?

f) What are the impacts of RAID on disc performance?

g) What are the key challenges identified in managing information in Data Center?

(7x4)

2.

a) Physical drives or groups of RAID protected drives can be logically split into volumes known as logical volumes or *Logical Unit Numbers* (LUNs). What are the advantages of having logical unit number?

b) RAID is used for information availability. What is the operational mechanism of RAID 3? What are the benefits of using RAID 3 in a backup application?

c) Draw architecture and explain components of intelligent storage system?

(4+6+8)

3.

a) Data Centers are developed to perform huge computation and to store large volumes of data. What are the Key characteristics of Data Center?

b) Write down the characteristic and limitations of NAS?

c) What are the features and benefits of Content Addressable Storage?

(6+6+6)

4.

a) Which are the core elements of data center infrastructure?

b) Network-Attached Storage (*NAS)* is an IP-based file-sharing device attached to a local area network. What are the advantages of it?

(9+9)

5.

a) What are the key parameters considered, while designing Storage Area Network?

b) Industry uses various tools to monitor SAN. Describe the characteristics of Monitoring tool for Storage Area Network?

(8+10)

6.

a) In RAID 1, data is mirrored to improve fault tolerance. But why, RAID 1 is not a substitute for a backup.

b) How one can plan for identifying the capacity of Storage Area Network?

c) The Seven Tiers of Disaster Recovery was originally defined to identify the various methods of recovering mission-critical computer systems as required to support business continuity. Write down the seven tiers of Disaster Recovery.

(5+6+7)

7.

a) What Factors Affect Performance and Availability of NAS?

b) What are the Fundamental Laws Governing Disk Performance?

c) What are the capabilities of High-end Storage Systems?

(6+6+6)