

**BE12-R4 : INFORMATION STORAGE AND 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) What is Storage Array ? Explain modular Vs monolithic Storage array classification with example.  
(b) Explain major performance consideration for FCIP.  
(c) What is Data Proliferation ? What problems arise due to Data Proliferation ?  
(d) What is NAS ? Also, explain the difference between NAS and SAN.  
(e) Explain about internal and external DAS in brief.  
(f) Differentiate between Data Management and Information Life cycle Management.  
(g) What are the various fibre channel ports on the switch ? (7x4)
2. (a) Explain benefits of using RAID 3 in a backup application.  
(b) Which are the factors that affect the Performance of Network Attached Storage (NAS) ?  
(c) Explain in brief about Hierarchical Storage Management (HSM), its usage and advantages. (6+6+6)
3. (a) You are storage administrator for a data centre that currently has 700 GB of active storage on fibre channel, RAID 5 based storage. An additional 200 GB of old archived data is kept on RAID 5, ATA based storage. Your new active data increases at a rate of 2 GB/day. 0.1 GB/day of archived data is restored to active status. 0.3 GB/day of active data can be migrated to archive status. Answer the following with justification :
  - (i) How much total fibre channel will be required in 365 days ?
  - (ii) How much total ATA storage is required in 365 days ?
  - (iii) How much additional fibre channel will be required for next year ?  
(b) Explain operational difference between a point in time copy and a clone. Compare and contrast under what operational conditions would you use a point in time copy, as compared to a clone. (9+9)
4. (a) Explain SCSI Command model in detail.  
(b) Explain Fiber Channel Architecture with respect to its protocol stack, FC Frame and FC data. (9+9)

5. (a) What is Cache ? Discuss the structure of Cache. Which type of application benefits the most by bypassing write cache ? Why ?  
(b) Explain about SMI-S and CIM industry management standards in detail. (9+9)
6. (a) Briefly narrate the comparison between RAID 0, 1, 3 & 4.  
(b) Explain LUN and LUN masking, activities associated with design of SAN.  
(c) Briefly explain the intelligent storage system with its components. (6+6+6)
7. (a) What is Logical Partitioning of Disks ? Write down the benefits of creating logical partition of multiple disks.  
(b) What are the Key Requirements for Data Center Elements ?  
(c) Explain the need of maintaining data centre consolidation requirement. (5+4+9)

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