**Enrollment No....................................**

## Faculty of Engineering
### End Sem (Even) Examination May-2022
### IT3EL03 Information Storage & Management
Programme: B.Tech.        Branch/Specialisation: IT

**Duration: 3 Hrs.**        **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. The aim of an information management strategy is to-    **1**
(a) Gain value from information resources.
(b) Protect information resources.
(c) Improve the quality of information resources.
(d) None of these

ii. What are the right sequence of evolution of various storage technologies?    **1**
(a) DAS, NAS, IP-SAN      (b) DAS, IP-SAN, NAS
(c) NAS, DAS, IP-SAN      (c) None of these

iii. Which RAID type doesn't use parity for data protection?    **1**
(a) RAID1    (b) RAID4    (c) RAID6    (d) RAID 5

iv. What is the minimum number of disks needed for RAID 5?    **1**
(a) 2      (b) 3      (c) 4      (d) 5

v. What is SCSI?    **1**
(a) Small Computer Simple Interface
(b) System Computer Select Interface
(c) Small Computer System Interface
(d) Small Computer System Interconnect

vi. A NAS solution is most appropriate for what type of data environment-    **1**
(a) Secured Access      (c) Shared Access
(c) Remote Access      (d) Parallel Access

vii. Which of the following backup technique is most space efficient? **1**
(a) Full backup   (b) Incremental backup
(c) Differential backup  (c) All of these

viii. Clients use which protocol to discover SMI Agents on Storage Area Network? **1**
(a) SLP (Service Location Protocol)
(b) AGP (Agent Discovery Protocol)
(c) SMIP (SMI Protocol)
(d) None of these

ix. Which of the following cloud concept is related to pooling and sharing of resources? **1**
(a) Polymorphism   (b) Abstraction
(c) Virtualization   (d) None of these

x. ………. refers to the location and management of the cloud's infrastructure. **1**
(a) Service    (b) Deployment
(c) Application   (d) None of these

Q.2 i. Explain following terms with respect to information storage- **4**
(a) Data and types of data. (b) Information
(c) Storage

ii. Explain the term data centre and its key requirements. **6**

OR iii. What do you mean by information life cycle? Explain with proper example. **6**

Q.3 i. Explain the components of an intelligent storage system. **3**

ii. Compare the RAID level (0,1,2,3,4,5,6) in terms of number of disks required, storage efficiency, cost, read and write performance, write penalty and protection. **7**

OR iii. Explain the Disk Drive components in detail with diagram. Define various factors that affect the performance of Disk Drives. **7**

Q.4 i. Discuss the advantages of FC-SW over FC-AL? **4**

ii. What is Direct Attached Storage (DAS)? Write down its security, limitations, advantages and disadvantages? **6**

OR iii. What is CAS? Write the steps to process of data retrieval from CAS. **6**

Q.5 i. What do you understand by key management metrics? **4**

ii. What is disaster recovery? Explain the importance of disaster recovery planning. **6**

OR iii. What do you mean by Virtualization? Discuss in detail the different form of virtualization. **6**

Q.6   Attempt any two:

i. What is meant by cloud computing? Explain its various characteristics. **5**

ii. Describe various services and applications on cloud. **5**

iii. Write a short note on- **5**
(a) Cloud security   (b) Cloud storage

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# Marking Scheme
## IT3EL03 Information Storage & Management

Q.1  i.  The aim of an information management strategy is to- **1**
(a) Gain value from information resources.

ii.  What are the right sequence of evolution of various storage technologies? **1**
(a) DAS, NAS, IP-SAN

iii.  Which RAID type doesn't use parity for data protection? **1**
(a) RAID1

iv.  What is the minimum number of disks needed for RAID 5? **1**
(b) 3

v.  What is SCSI? **1**
(c) Small Computer System Interface

vi.  A NAS solution is most appropriate for what type of data environment- **1**
(b) Shared Access

vii.  Which of the following backup technique is most space efficient? **1**
(b) Incremental backup

viii.  Clients use which protocol to discover SMI Agents on Storage Area Network? **1**
(a) SLP (Service Location Protocol)

ix.  Which of the following cloud concept is related to pooling and sharing of resources? **1**
(c) Virtualization

x.  ………. refers to the location and management of the cloud's infrastructure. **1**
(b) Deployment

Q.2  i.  (a) Data and types of data.  1 Mark each  **4**
(1 Mark*2)
(b) Information  1 Mark
(c) Storage  1 Mark

ii.  Define data centre  1 Mark  **6**
At least five key requirements.  1 Mark each
(1 Mark*5)

OR  iii.  Define information life cycle  3 Marks  **6**
Example.  3 Marks

Q.3  i.  3 components of an intelligent storage system  1 Mark each  **3**
(1 Mark*3)

ii.  Each parameter  1 Mark each  **7**
(1 Mark*7)

OR  iii.  3 Disk Drive components  1 Mark each  **7**
(1 Mark*3)

Diagram  1 Mark
3 factors that affect the performance of Disk Drives. 1 Mark each
(1 Mark*3)

Q.4  i.  4 advantages of FC-SW over FC-AL  1 Mark each  **4**
(1Mark*4)

ii.  Define Direct Attached Storage (DAS)  2 Marks  **6**
At least 2 security, limitations, advantages and disadvantages
1 Mark each
(1 Mark*4)

OR  iii.  Define CAS  2 Marks  **6**
Steps to process of data retrieval from CAS.  4 Marks

Q.5  i.  At least 4 key management metrics  1 Mark each  **4**
(1 Mark*4)

ii.  Define disaster recovery  3 Marks  **6**
At least 3 importance of disaster recovery planning.  1 Mark each
(1 Mark*3)

OR  iii.  Define Virtualization  2 Marks  **6**
At least 4 form of virtualization.  1 Mark each
(1 Mark*4)

Q.6  Attempt any two:
i.  Define cloud computing  2 Marks  **5**
At least 3 various characteristics.  1 Mark each
(1 Mark*3)

ii.  3 services  2.5 Marks  **5**
3 applications  2.5 Marks

iii.  (a) Cloud security  2.5 Marks  **5**
(b) Cloud storage  2.5 Marks

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