

Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2018
CA5EL21 Information Storage & Management

Programme: MCA

Branch/Specialisation: Computer
Application

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. Which of the Following is not an off-line storage device? **1**
(a) Tape Cartridge (b) Flash Memory
(c) Tape Library (d) CD-ROM
- ii. A tape library does not contain **1**
(a) Tape Drive (b) Bar Code Reader
(c) Robotic Arm (d) RAID Array
- iii. Which of the following provides byte level striping? **1**
(a) RAID 6 (b) RAID 4 (c) RAID 2 (d) RAID 5
- iv. Which one of the below is measured by MTBF? **1**
(a) Tolerance (b) Life time (c) Reliability (d) Quality
- v. How do Storage administrators ensure secure access to storage devices? **1**
(a) By using Zoning
(b) By putting a physical lock on the storage device
(c) By keeping devices shutdown when not in use
(d) All of these
- vi. Which of the below is component of SAN **1**
(a) Ethernet switch (b) Ethernet Card
(c) Fibre Switch (d) None of these
- vii. What is one significant advantage of Virtualization in datacentres? **1**
(a) Can manage the Data center with Zero Manpower
(b) Mirroring for Disaster Recovery
(c) Eliminate the need of physical devices for the Data center
(d) None of these

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- viii. Which of the following backup technique is most space efficient? **1**
(a) Incremental backup (b) Full backup
(c) Differential backup (d) All of these
- ix. There are endless rules and regulations in this area of storage technology. **1**
(a) Data Protection (b) Data Storage Management
(c) Database management (d) Meta data management
- x. Storage management comprises of **1**
(a) SAN Management (b) Data protection
(c) Disk operation (d) All of these
- Q.2 Attempt any two:
- i. What is an ILM? Explain the benefits of Information Lifecycle Management. **5**
- ii. Explain Disk Drive component with neat diagram. **5**
- iii. Describe the storage technologies and architecture evolution with suitable diagram. **5**
- Q.3 i. What do you understand by hot spares? **2**
ii. Explain the working of Zoned bits recording? **3**
iii. Explain the component of intelligent storage system in details. **5**
- OR iv. Compare the RAID level in terms of storage efficiency, cost, read and write performance, write penalty and protection. **5**
- Q.4 i. Give comparison between JBOD and RAID scalability. **2**
ii. What are the components of Content Addressable Storage system? Write the limitation of CAS? **3**
iii. Differentiate among DAS, SAN, NAS and CAS Technology. **5**
- OR iv. Explain SCSI architecture? What is the significance of SCSI architecture? How is the priority sequence established in a wide SCSI environment? **5**
- Q.5 i. (a) What is the key benefits of virtualization? **4**
(b) Write down the important features of VSAN?
ii. What are the types of storage virtualization? Explain any one using suitable diagram. **6**

- OR iii. What is the purpose of performing operation Backup, disaster recovery and archiving. **6**
- Q.6 Attempt any two:
- i. Briefly explain the different activities related to storage management? **5**
- ii. Explain Storage security domain with reference to threat, availability, controls and examples. **5**
- iii. Write the name of basic security implementation in storage networking. Explain IP SAN environment. **5**

Marking Scheme

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Q.1	i.	Which of the Following is not an off-line storage device? (c) Tape Library		1	
	ii.	A tape library does not contain (d) RAID Array		1	
	iii.	Which of the following provides byte level striping? (d) RAID 5		1	
	iv.	Which one of the below is measured by MTBF? (b) Life time		1	
	v.	How do Storage administrators ensure secure access to storage devices? (a) By using Zoning		1	
	vi.	Which of the below is component of SAN (c) Fibre Switch		1	
	vii.	What is one significant advantage of Virtualization in datacentres? (b) Mirroring for Disaster Recovery		1	
	viii.	Which of the following backup technique is most space efficient? (a) Incremental backup		1	
	ix.	There are endless rules and regulations in this area of storage technology. (b) Data Storage Management		1	
	x.	Storage management comprises of (d) All of these		1	
Q.2	Attempt any two:				
i.	ILM	2 marks	5		
	Benefits of Information Lifecycle Management	3 marks			
ii.	Disk Drive component Diagram.	3 marks 2 marks	5		
iii.	Storage technologies Architecture evolution	3 marks 2 marks	5		
Q.3	i.	Hot spares		2	
	ii.	Working of Zoned bits recording Example	2 marks 1 marks	3	
	iii.	Component of intelligent storage system	3 marks	5	
	OR	iv.	Explanation	2 marks	
			RAID level five level 1 mark each	(1 mark * 5)	5
Q.4	i.	Comparison between JBOD and RAID scalability.		2	
	ii.	Components of Content Addressable Storage system		3	
			2 marks		
		Limitation of CAS	1 mark		
	iii.	Difference among DAS, SAN, NAS and CAS Technology		5	
		1 mark for each	(1 mark * 5)		
	OR	iv.	SCSI architecture	2 marks	5
			Significance of SCSI architecture	2 marks	
			Sequence established in a wide SCSI environment	1 mark	
Q.5	i.	(a) Benefits of virtualization	2 marks	4	
		(b) Important features of VSAN	2 marks		
	ii.	Types of storage virtualization Diagram.	3 marks 3 marks	6	
	OR	iii.	Backup	2 marks	6
			Disaster recovery	2 marks	
			Archiving	2 marks	
Q.6	Attempt any two:				
	i.	Explanation	2 marks	5	
		Difference activities related to storage management	3 marks		
	ii.	Storage security domain	2 marks	5	
		Threat	1 mark		
		Availability	1 mark		
		Controls and example	1 mark		
	iii.	Implementation in storage networking IP SAN environment	3 marks 2 marks	5	
