B.Tech. DEGREE EXAMINATION, NOVEMBER 2022
Sixth/ Seventh Semester

18CSE360T – INFORMATION STORAGE AND MANAGEMENT
(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

Note:
(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.
(ii) **Part - B** should be answered in answer booklet.

Time: 2½ Hours   Max. Marks: 75

PART – A (25 × 1 = 25 Marks)
Answer **ALL** Questions

	Marks	BL	CO	PO
1. A hypervisor is a form of _____ used in cloud hosting to divide and allocate the resources on various pieces of hardware.	1	2	1	1

(A) Virtualization software   (B) System software
(C) Integrated approach   (D) Application

	Marks	BL	CO	PO
2. Which is not an example of unstructured data	1	1	1	1

(A) Email   (B) Instagram
(C) Google form   (D) Google sheet

	Marks	BL	CO	PO
3. Which technology enables consumption – based metering?	1	2	1	1

(A) Cloud computing   (B) Data center
(C) Mainframe server   (D) Operation system

	Marks	BL	CO	PO
4. _____ are suited for centralizing corporate data in a large enterprise	1	2	1	1

(A) Active-passive arrays   (B) Active-active arrays
(C) Passive-active arrays   (D) Passive-passive arrays

	Marks	BL	CO	PO
5. What defines the time taken to position the read/ write head across the platter with a radial movement in a disk drive?	1	1	1	1

(A) Service time   (B) Latency time
(C) Data transfer time   (D) Seek time

	Marks	BL	CO	PO
6. Ports operate in _____ data transmission mode with transmit (Tx) and receive (Rx) link	1	2	2	2

(A) Duplex mode   (B) Half duplex mode
(C) Single mode   (D) Hybrid mode

	Marks	BL	CO	PO
7. The iSCSI session-layer interface is responsible for handling login, authentication, _____ and session management.	1	1	2	2

(A) Data maintenance   (B) Containment
(C) Memory mapping   (D) Target discovery

	Marks	BL	CO	PO
8. Object based storage devices are used for _____ data.	1	2	2	1

(A) Structured   (B) Relational DB
(C) Unstructured   (D) Excel

	Marks	BL	CO	PO
b. What are the various factors that affect the disk drive performance? Discuss.	10	3	1	2
27. a.i. Illustrate any two inter connectivity options used in fibre channel architecture without having a dedicated data transmission path between nodes.	5	4	2	4
ii. With suitable diagrams, compare the implementation of iSCSI topologies with and without using fibre channel components.	5	4	2	4

(OR)

	Marks	BL	CO	PO
b. Discuss the way how the NAS implementation provides the capability to scale up their resources based on data growth and rise in performance requirements.	10	4	2	3
28. a. Compare and contrast any two backup targets with respect to working procedure and limitation.	10	3	3	3

(OR)

	Marks	BL	CO	PO
b.i. Analyse the data de-duplication implementation methods performed at the data source or at the backup target.	5	4	3	4
ii. Demonstrate business continuity life cycle plan with suitable examples.	5	3	3	3
29. a. Explain in detail about one way and two way of securing implementation in IP SAN.	10	3	4	3

(OR)

	Marks	BL	CO	PO
b.i. Differentiate among a process, a container and a virtual machine.	5	3	4	2
ii. Describe the different cloud storage levels.	5	3	4	2
30. a. Discuss in detail about the cloud challenges and cloud adoption considerations.	10	3	5	2

(OR)

	Marks	BL	CO	PO
b. How can a block-level virtualization implementation be used as a data migration tool? Explain how data migration will be accomplished and discuss the advantages of using this method for storage.	10	4	6	1

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9. _____ is an example of first developed content addressed storage   1 2 2 2
(A) AWS S2   (B) EMC centera
(C) ECS   (D) ISILON

10. Enterprise SAN ensure availability and performance by using _____.   1 1 2 2
(A) 7C switch   (B) 7C hub
(C) 7c switched fabric   (D) 7C

11. The _____ is the most appropriate solution when a backup device needs to be shared among clients.   1 2 3 2
(A) Application server-based backup   (B) Direct-attached backup
(C) Serverless backup   (D) SAN-based backup topology

12. _____ backup copies the data that has changed since the last full of incremental backup, whichever has occurred more recently   1 1 3 1
(A) Incremental   (B) Differential
(C) Backup granularity   (D) Recovery process outage

13. Which method helps to reduce the storage requirement for backup, shorten the backup window and remove the network burden   1 1 3 1
(A) Backup targets   (B) Data deduplication
(C) Data archival   (D) Data redundancy

14. _____ is an industry standard TCP/IP-based protocol specifically designed for a backup in a NAS environment.   1 1 3 2
(A) Network data management protocol   (B) Simple network management protocol
(C) LAN free based protocol   (D) Backup topology

15. An approach to perform backup in a virtualized environment   1 2 3 2
(A) Hypervisor   (B) Image-based backup
(C) Backup and archive   (D) Target-based data deduplication

16. What are all the two security controls for protecting the network in the storage infrastructure?   1 1 4 2
(A) Network infrastructure integrity and storage network encryption   (B) Zoning and dos
(C) Snooping and zoning   (D) Network infrastructure integrity and snooping

17. _____ prevents unauthorized switch from joining any existing switch in the fabric.   1 2 4 1
(A) Fabric binding   (B) RBAC
(C) Access control lists   (D) Users

18. Which among the following is owned by an organization who sells cloud services   1 1 4 1
(A) Hybrid   (B) Private
(C) Community   (D) Public

19. A _____ hosts on active cloud service and its further accessed by a cloud consumer for administrative purposes   1 1 4 2
(A) Virtual server   (B) Physical server
(C) Logical server   (D) Database server

20. The SLA (service-level agreement) serves as the foundation for the expected level of service between _____ and _____.   1 2 4 1
(A) Organization and provides   (B) Owner and provider
(C) Organization and consumer   (D) Consumer and provider

21. Which of the following impose additional overhead on clients and offer faster transfer?   1 1 5 1
(A) Block storage   (B) File storage
(C) File server   (D) Virtual server

22. _____ is hosted by an organization within its own data centers.   1 1 5 2
(A) Externally hosted private cloud   (B) On-premise private cloud
(C) Community cloud   (D) Hybrid cloud

23. Which one of the following is the true statement?   1 2 5 1
(A) Private cloud may be managed by the constituent organizations or by a third party   (B) A community cloud is managed by a business, academic or government organization
(C) Private clouds may be neither on-or off-premises   (D) A hybrid model does not allow on organization to leverage the scalability and cost effectiveness of public cloud

24. Which one of the following is the most important concern in cloud computing?   1 2 5 2
(A) Security   (B) Storage
(C) Scalability   (D) Elasticity

25. _____ is a single point of security failure for all the virtual machines running on the cloud infrastructure.   1 2 5 1
(A) Physical server   (B) Hypervisor
(C) Supervisor   (D) Controller

PART – B (5 × 10 = 50 Marks)
Answer **ALL** Questions

         Marks   BL   CO   PO

26. a. Consider a disk I/O system in which an I/O request arrives at the rate of 80 I/O per second. The disk service time is 6 ms. Compute the following   3 1 1
     (i) Utilization of I/O controller   2
     (ii) Total response time   2
     (iii) Average queue size   2
     (iv) Total time spent by a request in a queue   2
     (v) Compute the proceeding parameter if the service time is halved   2

(OR)