B.Tech DEGREE EXAMINATION, NOVEMBER 2023

Third Semester

18CSC208T - FUNDAMENTALS OF CLOUD COMPUTING

(For the candidates admitted during the academic year 2020 - 2021 & 2021 - 2022)

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** and **Part - C** should be answered in answer booklet.

Time: 3 Hours   **Max. Marks: 100**

PART - A (20 × 1 = 20 Marks)
Answer **all** Questions

		Marks	BL	CO

1. Identify the kind of cloud service of which online storage like Google Drive is an example. — 1 1 1
   (A) SaaS   (B) PaaS
   (C) IaaS   (D) Both Iaas and PaaS

2. _____ can refer to redundant IT resources within the same cloud or across multiple clouds. — 1 1 1
   (A) Multitenancy   (B) Elasticity
   (C) Resiliency   (D) Measured Usage

3. A physical computer will often contain a single installation of an operating system that can be used by a _____. — 1 1 1
   (A) Single consumer   (B) Multiple consumers
   (C) Owner   (D) Two consumers

4. _____ became the central point of communication in a dial-up connection — 1 1 1
   (A) Point to Point   (B) Bulletin boards
   (C) Single point to multipoint communication   (D) Direct communication

5. _____ can without much of a stretch be moved to another virtualization host, automatically resolving multiple hardware-software incompatibility issues. — 1 1 2
   (A) Network   (B) Virtual Servers
   (C) Virtualization   (D) Storage

6. _____ is required for extensive network hardware in order to enable multiple levels of connectivity. — 1 1 2
   (A) Database management system   (B) File systems
   (C) Storage System   (D) Data center

7. Which scalability is used in Online Transaction Processing? — 1 1 2
   (A) Vertical Scaling   (B) Horizontal Scaling
   (C) Dynamic Scaling   (D) Horizontal and Vertical Scaling

8. Virtual memory can only be effective if the code and the data exhibited in _____ — 1 1 2
   (A) Temporal locality   (B) Spatial and temporal locality
   (C) Spatial locality   (D) Optimal Locality

9. The network file system is based on _____ — 1 1 2
   (A) MANET   (B) Peer to Peer
   (C) Client Server Paradigm   (D) Adhoc

10. _____ will allow the definition of vocabularies used to associate meaning to Web-based data via metadata. | 1 | 1 | 2
   (A) HTML　　　　　　　　　　　　　　　(B) XML
   (C) SOAP　　　　　　　　　　　　　　　(D) REST

11. Choose the incorrect component used in the data center | 1 | 1 | 3
   (A) Virtualization　　　　　　　　　　　(B) Automation
   (C) Remote operation and management　　(D) Low Availability

12. _____ is the amount of time a packet to travel from one data node to another. | 1 | 1 | 3
   (A) QoS　　　　　　　　　　　　　　　(B) Latency
   (C) Throughput　　　　　　　　　　　　(D) Bandwidth

13. Which protocol is used for standardized, end-to-end communication support that facilitates the navigation of data packets across the Internet? | 1 | 1 | 3
   (A) HTTP　　　　　　　　　　　　　　(B) STP
   (C) TCP and UDP　　　　　　　　　　　(D) S2P

14. Attackers searching for information through public resources like search engines, websites, and social media are called _____. | 1 | 1 | 4
   (A) Reconnaissance　　　　　　　　　　(B) Scanning
   (C) Pivoting　　　　　　　　　　　　　(D) Exploiting

15. The inability to defend your application against a specific attack is called _____. | 1 | 1 | 3

   (A) Risk　　　　　　　　　　　　　　(B) Vulnerability
   (C) Threat　　　　　　　　　　　　　(D) Acceptable Risk

16. _____ is a security mechanism used to log into multiple services of SaaS Applications | 1 | 1 | 3
   (A) Encryption　　　　　　　　　　　(B) Hashing
   (C) Single Sign on　　　　　　　　　　(D) Digital Signature

17. Amazon introduces its _____ services that empower organizations to computing capacity and processing power to run their endeavor applications. | 1 | 1 | 4
   (A) Amazon Web Services　　　　　　　(B) Amazon App Engine
   (C) Elastic Compute Cloud　　　　　　(D) Cloud computing

18. Which of the following statements is not true? | 1 | 2 | 5

   (A) Through cloud computing, one can begin with very small and become big in a rapid manner.
   (B) All applications benefit from deployment in the Cloud.
   (C) Cloud computing is revolutionary, even though the technology it is built on is evolutionary.
   (D) Cloud Computing is on-demand delivery

19. Hadoop has -------- and at least has a minimum of ------------- replicas to ensure fault tolerance | 1 | 1 | 5
   (A) HDFS, 4　　　　　　　　　　　　(B) HDFS, 3
   (C) HDFS, 2　　　　　　　　　　　　(D) HGFS, 4

20. Managing daily transactions in banking and insurance comes under which kind of Application? | 1 | 2 | 5
   (A) Compute intensive Applications　　(B) Pipeline Instructions
   (C) Web Applications　　　　　　　　(D) Batch Processing Applications

PART - B (5 × 4 = 20 Marks)
Answer **any 5** Questions

Marks BL CO

21. Describe the four basic terminologies of Cloud computing. | 4 | 1 | 1

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	Marks	BL	CO

22. What is a Service–Level Agreement (SLA)? Explain the security controls classified in cloud computing. — 4 2 2

23. Write short notes on the roles and boundaries of the cloud. — 4 1 2

24. What do you understand by availability and reliability in terms of cloud computing and how these properties are achieved in cloud computing? — 4 2 3

25. Compare Encryption and Hashing along with its use case scenarios — 4 4 4

26. What is the purpose of Metastore in Hive QL? — 4 2 5

27. List and explain a few Google API Services — 4 1 5

PART - C (5 × 12 = 60 Marks)
Answer all Questions

	Marks	BL	CO

28. (a) The second-year students were asked to form a team for the development of a big project. When the project was divided into different modules, the team was told to design a cloud for their department. On seeing the way, the people work, the controller of examination was delighted to assign you (your team) the work of designing a cloud for the examination section. Now it is your team's responsibility to design a cloud model for both, the department and the examination section. As the team leader, which cloud deployment model due fit suitable for this scenario? Explain with justification. — 12 2 1

(OR)

(b) Explain the different types of cloud and its services in detail

29. (a) With a simple diagram, explain virtualization and its technologies and contrast hardware-based virtualization with operating system-based virtualization. — 12 1 2

(OR)

(b) i) Discuss in detail about the multitenant technology
ii) Describe any four technologies and their components used in data center in detail.

30. (a) Explain in detail the storage and data model evolution in cloud Applications — 12 2 3

(OR)

(b) i.Write and explain about Disk Locality Versus Data Locality in Computer Clouds. How to measure the task progress report?
ii. Write down the steps that are required in creating a cloud storage system with a neat diagram

31. (a) Sketch and explain any 5 cloud security mechanisms with a use case. — 12 2 4

(OR)

(b) Consider a company that maintains a multi-tier web application like Microsoft Xbox Live that contains its components and microservices residing in different servers. Identify and explain an ideal Network Authentication Protocol and its stages of working

32. (a) Explain how the Map Reduce Programming Model can used to perform and enhance the Google search Mechanism — 12 4 5

(OR)

(b) Explain any two cloud Application Architectural Styles in detail

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