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B.Tech DEGREE EXAMINATION, NOVEMBER 2023

Fifth Semester

18CSE344T - CLOUD ARCHITECTURE

(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.	Which of the following is the most refined and restrictive cloud service model? (A) Platform as a Service (B) Infrastructure as a Service (C) Software as a Service (D) IT as a Service	1	1	1
2.	Which threat imposes challenges on service availability and data lock-in problems? (A) Replay Attack (B) Distributed Denial of Service (C) Phishing Attacks (D) Cross-site scripting Attack	1	2	1
3.	Select the enabling technology from which the cloud adopted the pay-per-use model. (A) Grid Computing (B) Parallel Computing (C) Distributed Computing (D) Utility Computing	1	2	1
4.	Identify the cloud infrastructure that is provisioned for exclusive use by a specific group of consumers from organizations. (A) Private Cloud (B) Public Cloud (C) Community Cloud (D) Hybrid Cloud	1	2	1
5.	Which HTTP method does the REST use to make an HTTP request to create a new resource? (A) POST (B) PUT (C) CREATE (D) UPDATE	1	1	2
6.	Choose the architecture model realized by the vector processor for processing large volumes of data. (A) SISD (B) SIMD (C) MIMD (D) MISD	1	1	2
7.	In which type of multiprocessing, processors share memory and I/O bus or data path and are tightly coupled? (A) Symmetric Multiprocessing (B) Massive Parallel Processing (C) Pipelining (D) Vector Processing	1	1	2
8.	Which architectural design is employed in the construction of the Service Oriented Architecture? (A) Tightly Coupled (B) Loosely Coupled (C) Tightly cohesive (D) Loosely Cohesive	1	2	2
9.	Identify the key security measures that minimize vulnerabilities at the storage level. (A) LUN Masking (B) Demilitarized zone (C) VM Hardening (D) Firewall	1	2	3

10.	Which storage virtualization method uses an additional hardware component and communication protocols to present the storage as a single virtual pool? (A) Host-based storage virtualization (B) Array-based storage virtualization (C) Network-based storage virtualization (D) Software-based storage virtualization	1	1	3
11.	Identify the term that defines a situation where any existing security threat in the cloud spreads more rapidly and has a larger impact in traditional data center environments. (A) Data privacy (B) Velocity-of-attack (C) Information assurance (D) Server security	1	2	3
12.	Select the name of the system that automatically analyzes events to check whether an event or a sequence of events matches a known pattern for anomalous activity in the network. (A) Intrusion Detection System (B) Pattern Analysis system (C) Hybrid cloud system (D) Cloud protection system	1	1	3
13.	Which process integrates a graded compute pool with a graded network pool and a graded storage pool? (A) Grading Resources (B) Bundling resources (C) Distributing Resources (D) Defining Resources	1	1	4
14.	What is the process of choosing, deploying, and managing hardware resources during runtime in order to assure application performance? (A) Resource Provisioning (B) Cloud Provisioning (C) User self-Provisioning (D) Hardware Provisioning	1	1	4
15.	Select the primary principles of cloud economics. (A) Economics of Scale and Reliability (B) Reliability and Global Reach (C) Security and Global Reach (D) Global reach and Economics of scale	1	1	5
16.	Which of the following cloud storage options is primarily designed for developers and supports Web services-based applications? (A) Managed (B) Unmanaged (C) Semi-Managed (D) Disk	1	1	5
17.	Which of the following concept extracts the common and reusable design principles and components? (A) Software Design (B) Software Design pattern (C) Architecture pattern (D) Hardware architecture	1	1	6
18.	What type of scaling method increases the capacity of the application by adding resources to the existing node? (A) Scaling up (B) Scaling down (C) Horizontal scaling (D) Scaling in	1	2	6
19.	What is the name of the node that contains a subset of the data to process large volume database? (A) Blade (B) Shard (C) Cluster (D) Bundle	1	1	6
20.	In the Node failure pattern when the hardware on which the application is deployed gets sudden failure and restarted, what about the status of the data present in it? (A) Local data may be available (B) Local data is lost (C) Local data is available (D) Local data is partially available	1	2	6

PART - B (5 × 4 = 20 Marks) — Marks | BL | CO

Answer **any 5** Questions

21.	What are the enabling technologies of cloud computing? Explain the features that are adopted by the cloud from them.	4	1	1

22.	What is virtualization? Outline the key benefits of virtualization is cloud.	4	2	2
23.	Differentiate Network-Attached Storage from Direct-Attached Storage of cloud storage design.	4	4	3
24.	What is SIEM? Summarizes security auditing and SIEM.	4	2	3
25.	Explain the management of various cloud services.	4	1	4
26.	Describe how the global exchange of cloud resources plays a major role in today's market needs.	4	3	5
27.	What is data Sharding? Explain the Database sharding pattern.	4	1	6

PART - C (5 × 12 = 60 Marks)

Answer **all** Questions

		Marks	BL	CO
28.	(a) Outline various deployment models of the cloud with a neat sketch and identify which among them could be applied to formulate a cloud structure for a large firm.	12	4	1
	(OR)			
	(b) What is virtualization? Explain different types of virtualization in cloud computing.			
29.	(a) Explain the different implementation levels of virtualization with the key features needed to virtualize each level.	12	2	2
	(OR)			
	(b) Differentiate Vector Processing, Symmetric Multiple Processing, and Massive Parallel Processing.			
30.	(a) Explain how to Secure storage in virtualized and cloud environments.	12	3	3
	(OR)			
	(b) Illustrate and explain different cloud storage architecture designs for large companies distributed throughout the world with their merits.			
31.	(a) Describe the process or tools that support the creation and management of cloud services and resources.	12	2	4
	(OR)			
	(b) What is resource provisioning? Explain the phases and methodology of resource provisioning.			
32.	(a) Suggest and explain any two cloud architecture patterns suitable to adopt scalability in a dynamic environment of a business deployed in the cloud.	12	4	6
	(OR)			
	(b) Illustrate and compare Blade Server and Stateless Server.			

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