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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

M.Tech (Integrated)

SEM: V - THEORY EXAMINATION (2024 - 2025)

Subject: Cloud Virtualization

Time: 3 Hours

Max. Marks: 100

General Instructions:*IMP: Verify that you have received the question paper with the correct course, code, branch etc.**1. This Question paper comprises of three Sections -A, B, & C. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.**2. Maximum marks for each question are indicated on right -hand side of each question.**3. Illustrate your answers with neat sketches wherever necessary.**4. Assume suitable data if necessary.**5. Preferably, write the answers in sequential order.**6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.***SECTION-A**

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1. Attempt all parts:-

- 1-a. In a _____ scheme, the VM is installed as a Type 1 Hypervisor directly onto the hardware.(CO1,K1) 1
- (a) paravirtualization
- (b) full virtualization
- (c) emulation
- (d) None of these
- 1-b. HAL stands for (CO1,K1) 1
- (a) Hardware abstraction Layer
- (b) High abstraction Layer
- (c) Hardware abstraction level
- (d) High abstraction Level
- 1-c. _____ as a utility is a dream that dates from the beginning of the computing industry itself.(CO2,K1) 1
- (a) Model
- (b) Computing
- (c) Software
- (d) All of the mentioned
- 1-d. Cloud computing is a _____ system and it is necessarily unidirectional in nature.(CO2,K1) 1

- (a) stateless
 - (b) stateful
 - (c) reliable
 - (d) all of the mentioned
- 1-e. If virtualization occurs at application level, OS level and hardware level, then such service in cloud is (CO3,K1) 1
- (a) IAAS
 - (b) SAAS
 - (c) PAAS
 - (d) CAAS
- 1-f. Amazon Web Services & newest encryption tool is. (CO3,K1) 1
- (a) Amazon Elastic Block Storage Encryption
 - (b) AWS Identity and Access Management
 - (c) Amazon S3
 - (d) Py Charm
- 1-g. Amazon S3 is a _____.(CO4,K1) 1
- (a) Relational database
 - (b) Key-Based object store
 - (c) Domain System
 - (d) Content Delivery Network
- 1-h. The following is not true about Amazon Glacier.(CO4,K1) 1
- (a) Optimized for data that is infrequently accessed
 - (b) Secure and durable storage for data archiving and backup
 - (c) Services enables rapid disaster recovery
 - (d) Optimized for data for which retrieval times of several hours are suitable
- 1-i. Point the cloud function is used to support Elastic Load Balancing.(CO5,K1) 1
- (a) CloudWatch
 - (b) EBS
 - (c) S3
 - (d) AWS import/Export
- 1-j. To prevent messages from being lost or becoming unavailable, all messages are stored _____ across multiple servers and data centers.(CO5,K1) 1
- (a) Publicly
 - (b) Superfluously
 - (c) Redundantly
 - (d) Privately

2. Attempt all parts:-

- 2.a. Define memory virtualization.(CO1,K1) 2

2.b.	Briefly explain about Microsoft Windows Azure.(CO2,K2)	2
2.c.	Describe AWS Elastic Beanstalk. (CO3,K3)	2
2.d.	Write short notes on Amazon S3 Event notifications.(CO4,K2)	2
2.e.	Explain Simple Queue Service (SQS). (CO5,K2)	2

SECTION-B

30

3. Answer any five of the following:-

3-a.	Differentiate between native Virtualization and Emulation. (CO1,K3)	6
3-b.	Briefly define Instruction Set Architecture Level in virtualization.(CO1,K2)	6
3-c.	Explain about Virtual Machine Manager with a suitable example and proper diagram.(CO2,K3)	6
3-d.	Briefly explain Distributed Defense against DDoS Flooding Attacks.(CO2,K2)	6
3.e.	Explain AWS Cloud Digital Interface Software Development Kit.(CO3,K3)	6
3.f.	Explain the storage classes available in Amazon S3 in detail. (CO4,K2)	6
3.g.	Explain Elastic Load Balancing (ELB) with suitable example.(CO5,K3)	6

SECTION-C

50

4. Answer any one of the following:-

4-a.	Explain full virtualization and para virtualization. (CO1,K2)	10
4-b.	Explain Role of Hypervisor in Virtualization Process with suitable example. (CO1,K2)	10

5. Answer any one of the following:-

5-a.	Is virtualization support is needed to achieve fast cloning of VMs? Explain how VM cloning can enable fast recovery. (CO2,K3)	10
5-b.	Explain Infrastructure as a Service (IaaS) in detail with a suitable example. (CO2,K2)	10

6. Answer any one of the following:-

6-a.	Describe features of IAM in creating role based ACL with suitable diagram. (CO3,K3)	10
6-b.	Explain various types of Amazon EC2 instances and their essential features.(CO3,K2)	10

7. Answer any one of the following:-

7-a.	Explain various database types (Unstructured, Semistructured, and Structured data) in detail. (CO4,K3)	10
7-b.	Write short notes on the storing data in (a) EFS (b) EBS (c) S3. (CO4,K2)	10

8. Answer any one of the following:-

8-a.	Describe function of launch configuration in Amazon EC2 Auto Scaling. (CO5,K2)	10
8-b.	Explain the Cloud Application Programming Interface (Cloud API) with a suitable example. (CO5,K3)	10