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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)

MCA (Integrated)

SEM: IV - THEORY EXAMINATION (2025 - 2026)

Subject: Cloud Computing

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

20

1. Attempt all parts:-

- (1.1) Cloud computing supports innovation in organizations by offering _____.(C01,K2) 1
- (a) Fixed infrastructure
- (b) Manual processes
- (c) High capital cost
- (d) Faster provisioning
- (1.2) Utility computing model supports _____.(C01,K2) 1
- (a) Logical isolation
- (b) Pay-per-use services
- (c) One-time purchase
- (d) Expensive software licenses
- (1.3) A virtual machine is:(CO2,K1) 1
- (a) Software simulation of a physical computer
- (b) A database server
- (c) A CPU register
- (d) An application
- (1.4) CPU Virtualization helps to:(CO2,K1) 1
- (a) Share processor among multiple OS
- (b) Increase disk size
- (c) Enhance GUI
- (d) Reduce internet use

- (1.5) In SOA, a Service Contract means: (CO3, K1) 1
- (a) A legal document between service providers and consumers
 - (b) A formal agreement between different departments in an organization
 - (c) A specification that defines the interface and behavior of a service
 - (d) A financial agreement for purchasing software licenses
- (1.6) Name the aspect that is not a benefit of SOA. (CO3, K1) 1
- (a) Improved agility and flexibility
 - (b) Enhanced interoperability
 - (c) Increased complexity
 - (d) Better scalability
- (1.7) Choose the method commonly used to access and manage cloud-based virtual machines.(CO4,K1) 1
- (a) SSH
 - (b) Remote Desktop Protocol (RDP)
 - (c) Web-based console
 - (d) All of the above
- (1.8) Select an OS that is not commonly used for virtual machine instances in the cloud.(CO4,K1) 1
- (a) Windows
 - (b) Linux
 - (c) MacOS
 - (d) Ubuntu
- (1.9) Recognize the stage responsible for storing data securely and efficiently.[K1][CO5] 1
- (a) Ingestion
 - (b) Storage
 - (c) Analysis
 - (d) Presentation
- (1.10) Identify the lifecycle stage where data is transformed for analysis.[K2][CO5] 1
- (a) Acquisition
 - (b) Transformation
 - (c) Presentation
 - (d) Distribution

2. Attempt all parts:-

- (2.1) Describe the main characteristics of cloud computing. (CO1, K2) 2
- (2.2) Explain the need for virtualization in cloud computing. (CO2, K2) 2
- (2.3) Explain the concept of systems of systems. (CO3, K2) 2
- (2.4) Define unmanaged resources in cloud computing. (CO4, K1) 2
- (2.5) Describe the cloud data life cycle. (CO5, K2) 2

SECTION-B

30

Answer any one of the following:-

(3.1)	Differentiate parallel and distributed computing. (CO1, K2)	6
(3.2)	Differentiate scalability and elasticity in cloud computing. (CO1, K2)	6
Answer any one of the following:-		
(3.3)	Analyze the role of host operating systems in virtualization platforms. (CO2, K4)	6
(3.4)	Describe the purpose of emulation in virtualization. (CO2, K2)	6
Answer any one of the following:-		
(3.5)	Describe the publish-subscribe model in cloud communication. (CO3, K2)	6
(3.6)	Explain public, private, and hybrid cloud deployment models. (CO3, K2)	6
Answer any one of the following:-		
(3.7)	Describe instance management in cloud environments. (CO4, K2)	6
(3.8)	Describe Azure Virtual Machine and its uses. (CO4, K2)	6
Answer any one of the following:-		
(3.9)	Analyze the impact of unauthorized access on cloud security. (CO5, K4)	6
(3.10)	Examine the importance of backup security in cloud systems. (CO5, K4)	6
<u>SECTION-C</u>		50
4. Answer any <u>one</u> of the following:-		
(4.1)	Analyze the contribution of distributed systems to cloud performance. (CO1, K4)	10
(4.2)	Examine the impact of cloud availability on user experience. (CO1, K4)	10
5. Answer any <u>one</u> of the following:-		
(5.1)	Describe the use of hypervisor layers in cloud systems. (CO2, K2)	10
(5.2)	Examine the impact of virtualization on IT infrastructure cost. (CO2, K4)	10
6. Answer any <u>one</u> of the following:-		
(6.1)	Explain REST in detail with proper diagram. (CO3, K2)	10
(6.2)	Compare IaaS, PaaS, and SaaS with suitable cloud use cases. (CO3, K3)	10
7. Answer any <u>one</u> of the following:-		
(7.1)	Describe Key features of Google Compute Engine. (CO4, K2)	10
(7.2)	Explain Disaster recovery and storage migration in detail. (CO4, K2)	10
8. Answer any <u>one</u> of the following:-		
(8.1)	Explain the benefits of cloud security. (CO5, K2)	10
(8.2)	Explain the Security standards in cloud security. (CO5, K2)	10