Subject Code:- AMICSAI0514

Roll. No:

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: Introduction to 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-a.   _____ self service is a major characteristic of cloud computing.(CO1,K1)   1

   (a)   On demand

   (b)   Off demand

   (c)   In Demand

   (d)   None of the above

1-b.   The _____ is something that you can obtain under contract from your vendor.(CO1,K1)   1

   (a)   PoS

   (b)   QoS

   (c)   SoS

   (d)   All of the mentioned

1-c.   In which scheme, the VM is installed as a Type 1 Hypervisor directly onto the hardware. (CO2,K1)   1

   (a)   para virtualization

   (b)   full virtualization

   (c)   emulation

   (d)   none of the mentioned

1-d.   Identify the incorrect statement.(CO2,K1)   1

   (a)   Full virtualization requires that the host operating system provide a virtual machine

interface for the guest operating system and that the guest access hardware through that host VM

(b) Guest operating systems in full virtualization systems are generally faster than other virtualization schemes

(c) A process virtual machine instantiates when a command begins a process

(d) All of the mentioned

1-e. Cloud infrastructure deployed by an organization on its data centres within its premises is known as (CO3,K1)   1

(a) Externally hosted private cloud

(b) On-premise private cloud

(c) Public cloud

(d) Community cloud

1-f. Select one of the following statement which is not true about SaaS.(CO3,K1)   1

(a) Consumers can use the provider's applications running on a cloud infrastructure

(b) Applications are accessible from various client devices through a web browser or a client program

(c) Consumers control only the deployed applications

(d) A consumer does not manage or control any aspect of the cloud infrastructure

1-g. An operational support system is required to deliver _____(CO4,K1)   1

(a) cloud services

(b) client services

(c) server processes

(d) client processes

1-h. RDS (Relational Database Service) benefits includes.(CO4,K1)   1

(a) easy to administer

(b) inexpensive

(c) available and durable

(d) All of the mentioned

1-i. VM security is based on..........(CO5,K1)   1

(a) Trusted computing base

(b) Platform security

(c) Software security

(d) Cloud computing services

1-j. OpenStack is..................(CO5,K1)   1

(a) Infrastructure

(b) Platform

(c) Software

(d) None of the mentioned

2. Attempt all parts:-

2.a.	Define Elasticity with suitable example.(CO1,K1)	2
2.b.	Explain Desktop Virtualization with suitable example.(CO2,K2)	2
2.c.	Name 5 public cloud service provider.(CO3,K1)	2
2.d.	Define Storage services with suitable example.(CO4,K1)	2
2.e.	List some challenges in cloud security.(CO5,K1)	2

SECTION-B   30

3. Answer any <u>five</u> of the following:-

3-a.	Discuss principle of distributed computing with suitable examples.(CO1,K2)	6
3-b.	Explain on-demand functionality also discuss the method of providing it in cloud computing.(CO1,K2)	6
3-c.	Distinguish type1 and type2 hypervisor.(CO2,K4)	6
3-d.	Explain virtual machine with real time example and discuss its advantages and disadvantages.(CO2,K2)	6
3-e.	Contrast the benefits of NIST reference architecture against cloud layered architecture.(CO3,K2)	6
3.f.	Describe how can S3 (Simple Storage Service) be integrated with other AWS services.(CO4,K2)	6
3.g.	Discuss relation between Google app engine and Google compute engine. (CO5,K2)	6

SECTION-C   50

4. Answer any <u>one</u> of the following:-

4-a.	Analyze and Discuss the characteristics and categories of Elastic compute cloud (EC2) instances also list few other services provided by AWS.(CO1,K4)	10
4-b.	Differentiate among distributed computing, clustered computing and grid computing with suitable example.(CO1,K4)	10

5. Answer any <u>one</u> of the following:-

5-a.	Describe the idea of virtualization using an appropriate example with neat and clean diagram.(CO2,K4)	10
5-b.	Explain how a cloud environment is beneficial to customers with suitable examples and also associate its effects on consumers.(CO2,K4)	10

6. Answer any <u>one</u> of the following:-

6-a.	Specify the Cloud Computing Reference Architecture also discuss the benefits of CCRA with suitable example.(CO3,K4)	10
6-b.	Discuss Layered Cloud Architecture Design with suitable example also explain the need of clous architecture in cloud computing.(CO3,K4)	10

7. Answer any <u>one</u> of the following:-

7-a.	Contrast the architectural challenges in cloud computing with suitable real life example.(CO4,K4)	10

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7-b.	Explain AWS Elastic Block Storage with it's concepts in detail also write differences between S3 and Elastic Block Storage with suitable example. (CO4,K4)	10

8. Answer any <u>one</u> of the following:-

8-a.	Explain Inter cloud resource management with suitable example also discuss IAM, Security standards and VPC with there concepts in detail. (CO5,K4)	10
8-b.	Elaborate on the parameters on which resource provisioning methods depend, with suitable examples.(CO5,K3)	10

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