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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 (2025 - 2026)

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. Select one of the following cloud computing characteristic that enables consumers to get computing resources without any human intervention. (CO1,K1) 1
- (a) Broad network access
- (b) Measured service
- (c) Rapid elasticity
- (d) On-demand self service
- 1-b. A potential consumer can use the self service portal to view the cloud service listed in the service catalog.(CO1,K1) 1
- (a) Consumer can access through manual request
- (b) Services are listed in a private catalog
- (c) Accessible through the self-service portal
- (d) Not visible to consumers directly
- 1-c. Point out the wrong statement.(CO2,K1) 1
- (a) Some hypervisors are installed over an operating system and are referred to as Type 2 or hosted VM
- (b) All CPUs support virtual machines
- (c) On a Type 2 VM, a software interface is created that emulates the devices with which a system would normally interact
- (d) All of the mentioned
- 1-d. Select one of the following which is not a type of virtualization. (CO2,K1) 1
- (a) Server virtualization
- (b) Network virtualization

- (c) Macro virtualization
- (d) Storage virtualization
- 1-e. Most PaaS offerings are 'polyglot' in nature.(CO3,K1) 1
- (a) Only supports one language
- (b) Supports multiple programming languages
- (c) Restricts programming flexibility
- (d) Supports legacy systems only
- 1-f. About which the statement is true: A cloud service is an application development platform.(CO3,K1) 1
- (a) IaaS
- (b) PaaS
- (c) SaaS
- (d) All of these
- 1-g. Cloud storage is a cloud computing model that stores data on the internet through a cloud computing provider who manages and operates. (CO4,K1) 1
- (a) Database as a service
- (b) Data storage as a service
- (c) Network as a service
- (d) Anything as a service
- 1-h. To find the best security-as-a-service offering for your organization:(CO4,K1) 1
- (a) Ask the vendor what they recommend
- (b) Assess your requirements, do a risk assessment and a cost/benefit analysis of the options
- (c) Find the cheapest monthly option and use whatever is offered with that service
- (d) Ask your peers and do exactly what they're doing
- 1-i. In Inter- Cloud multiple cloud entities can work in. (CO5,K1) 1
- (a) Divorce
- (b) Alliance
- (c) Hostility
- (d) Discord
- 1-j. Choose the option(s) that is/are not a passive attack. (CO5,K1) 1
- (a) Traffic Analysis
- (b) Release of message contents
- (c) Denial of service
- (d) Encryption
2. Attempt all parts:-
- 2.a. Define the term on-demand service. (CO1,K1) 2
- 2.b. Elaborate hardware emulation. (CO2,K2) 2
- 2.c. Name the layers in Layered Cloud Architecture. (CO3,K1) 2
- 2.d. Define Elastic File Storage with suitable example. (CO4,K1) 2

2.e.	Confer “inter cloud ticket”. (CO5,K2)	2
SECTION-B		30
3. Attempt all parts:-		
3.a. Answer any <u>one</u> of the following:-		
3.a.(i)	Elaborate different types of Cloud Computing techniques with suitable example. (CO1,K3)	6
3.a.(ii)	Define private cloud with real time suitable example. (CO1,K1)	6
3.b. Answer any one of the following:-		
3.b.(i)	Classify the types of load balancing techniques with suitable real time example. (CO2,K3)	6
3.b.(ii)	Explain internet technologies that helped in the development of cloud with suitable example. (CO2,K2)	6
3.c. Answer any one of the following:-		
3.c.(i)	Discuss need of SLA with suitable example.(CO3,K2)	6
3.c.(ii)	Differentiate between public and private cloud with suitable example. (CO3,K3)	6
3.d. Answer any one of the following:-		
3.d.(i)	Discuss some cloud architecture challenges in cloud computing. (CO4,K2)	6
3.d.(ii)	Explain how can organizations best align their cloud service management strategies with their specific business goals and objectives, and discuss some methodologies or frameworks can facilitate this alignment. (CO4,K3)	6
3.e. Answer any one of the following:-		
3.e.(i)	Discuss cloud security challenges with suitable example. (CO5,K3)	6
3.e.(ii)	Draw a service delivery communication model of inter-cloud resource exchange and discuss its advantages and disadvantages. (CO5,K4)	6
SECTION-C		50
4. Answer any <u>one</u> of the following:-		
4-a.	Describe the different issues in cloud computing and also explain how the cloud is beneficial for a layman. (CO1,K3)	10
4-b.	Briefly explain the advantages and disadvantages of cloud computing. (CO1,K3)	10
5. Answer any <u>one</u> of the following:-		
5-a.	(i)Identify and write the challenges faced while implementing cloud computing. (ii) Mention the features of cloud computing (CO2,K2)	10
5-b.	Discuss in detail importance of hypervisor and its types. (CO2,K2)	10
6. Answer any <u>one</u> of the following:-		
6-a.	Elaborate benefits of NIST reference architecture against other cloud computing architectures.(CO3,K3)	10
6-b.	Explain SaaS with its feature and benefits. Define Mashups in SaaS cloud offering. (CO3,K3)	10
7. Answer any <u>one</u> of the following:-		
7-a.	Draw and explain the interaction and usage scenario between cloud actors. (CO4,K4)	10

- 7-b. Explain the role of effective cloud service management in supporting scalability and flexibility in modern IT infrastructures. (CO4,K3) 10
8. Answer any one of the following:-
- 8-a. Review a case study on the transition from the standard environment to the flexible environment of Google App Engine (GAE). (CO5,K4) 10
- 8-b. Explain some cloud specific security culture needed in cloud security also discuss some real time examples. (CO5,K3) 10

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