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BTECH
(SEM V) THEORY EXAMINATION 2024-25
CLOUD COMPUTING

TIME: 3 HRS**M.MARKS: 100****Note:** Attempt all Sections. In case of any missing data; choose suitably.**SECTION A****1. Attempt all questions in brief.****2 x 10 = 20**

Q no.	Question	CO	Level
a.	Define Cloud Computing and its characteristics.	1	K1
b.	Explain elasticity in the cloud with a brief example.	1	K2
c.	Discuss REST in Service-Oriented Architecture?	2	K2
d.	Mention the advantages of virtualization in cloud computing.	2	K2
e.	Differentiate between public and private clouds.	3	K2
f.	List the challenges in cloud architectural design.	3	K1
g.	Describe PaaS with an example.	4	K2
h.	Explain auto scaling in AWS.	4	K2
i.	Define MapReduce in the Hadoop ecosystem.	5	K2
j.	Explain the key features of OpenStack?	5	K2

SECTION B**2. Attempt any three of the following:****10 x 3 = 20**

Q no.	Question	CO	Level
a.	Discuss the principles of parallel and distributed computing in cloud.	1	K2
b.	Illustrate NIST Cloud computing reference architecture in details.	2	K4
c.	Analyze the security challenges of service models IAAS, PAAS and SAAS in cloud computing.	3	K4
d.	Describe the significance of Virtual Machine Security in a cloud environment.	4	K3
e.	Examine the role of VirtualBox in creating isolated development environments for cloud applications.	5	K4

SECTION C**3. Attempt any one part of the following:****10 x 1 = 10**

Q no.	Question	CO	Level
a.	Explain the importance of cloud computing and elaborate the different types of services offered by it.	1	K4
b.	Illustrate the Cloud Architecture and explain its layered design.	1	K4

4. Attempt any one part of the following:**10 x 1 = 10**

Q no.	Question	CO	Level
a.	“Vmware technology is based on the concept of full virtualization”. Comment either in support or against this statement.	2	K5
b.	Classify the taxonomy of virtualization. Explain hardware virtualization techniques.	2	K4

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5. Attempt any *one* part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Analyze the role of Hypervisor in virtualization. Also explain different types of hypervisors.	3	K4
b.	Illustrate the role of different cloud service models in cloud computing.	3	K4

6. Attempt any *one* part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Classify a disaster recovery plan that leverages global exchange of cloud resources to ensure business continuity.	4	K4
b.	Examine the role of Identity & Access Management in cloud computing. Illustrate the concepts and benefits of IAM in cloud security.	4	K4

7. Attempt any *one* part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Classify the architecture of Google App Engine. Assess the advantages and limitations of different programming environments for Google App Engine development.	5	K4
b.	Illustrate the concept of federation in the cloud. Predict potential advancements and challenges in the future of cloud federation.	5	K4