Dr. A.P.J. Abdul Kalam Technical University (AKTU) · B.Tech Theory Examination

Cloud Computing

BCS071 · Jan 2026

Time: 3 Hours **Max. Marks: 70**

Attempt all Sections.
In case of any missing data; choose suitably.

SECTION A

1(a)	Define cloud computing and explain why elasticity is a key feature in modern cloud platforms.	2	U1
1(b)	What is on-demand provisioning and how does it benefit cloud users?	2	U1
1(c)	Explain virtualization and mention one real-life benefit of using virtual machines.	2	U2
1(d)	What is Service Oriented Architecture (SOA) and why is it important in cloud services?	2	U3
1(e)	Define IaaS with one practical example from industry.	2	U3
1(f)	What is cloud storage and how is it different from traditional storage systems?	2	U4
1(g)	What is Hadoop and why is it considered suitable for big data processing?	2	U5

SECTION B

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2(a)	Explain the evolution of cloud computing and its relationship with distributed computing.	7	U1
2(b)	Describe types of virtualization and explain how CPU virtualization is achieved.	7	U2
2(c)	Explain SaaS, PaaS and IaaS with suitable use-case based examples.	7	U3
2(d)	Discuss cloud storage architecture and advantages of Storage-as-a-Service.	7	U4
2(e)	Explain MapReduce programming model and its role in Hadoop ecosystem.	7	U5

SECTION C

3(a)	Explain NIST cloud reference architecture and its significance in standardization.	7	U1
3(b)	Explain REST-based web services and their role in cloud applications.	7	U3
4(a)	Explain inter-cloud resource management and challenges in global resource sharing.	7	U4
4(b)	Describe security challenges in cloud computing with suitable examples.	7	U4
5(a)	Explain IAM and its importance in securing cloud-based systems.	7	U4
5(b)	Explain VM security issues and preventive measures in cloud environments.	7	U4
6(a)	Explain Google App Engine architecture and its programming environment.	7	U5
6(b)	Describe OpenStack architecture and its role in private cloud deployment.	7	U5
7(a)	Explain federation in cloud computing and its four levels.	7	U5
7(b)	Discuss future trends and challenges in cloud federation.	7	U5

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