Cloud Computing Important Questions PDF

The most important Cloud Computing questions are the NIST definition and its five characteristics, service models (IaaS, PaaS, SaaS) and deployment models (public, private, hybrid, community), cloud architecture, virtualisation and the types of hypervisor, live VM migration, SOA and web services, cloud storage and data centres, MapReduce and Hadoop, cloud security and the shared responsibility model, and case studies of AWS, Azure and Google Cloud.

Key takeaways

- Service and deployment models, virtualisation and cloud security are asked in almost every paper.
- Draw the cloud reference architecture and the Type 1 versus Type 2 hypervisor diagram.
- Use one real provider service as an example for each service model.
- These are practice questions, not past papers; check your own syllabus and official previous papers.

About these important questions

This page lists the most important Cloud Computing questions for B.Tech CSE and IT exams, arranged unit by unit. The units follow the standard syllabus that most Indian technical universities share, so the order may differ slightly from yours.

Please note: these are practice questions based on common syllabus topics. They are not verified past papers, and we do not claim that any question will appear in your exam. Check your own university syllabus first, then solve the official previous year papers. AKTU students can download them from the AKTU old question paper archive.

Unit 1: Introduction to Cloud Computing

Covers definitions, evolution, characteristics and the benefits and risks of the cloud.

Short questions (2 marks)

- Give the NIST definition of cloud computing.
- List the five essential characteristics of cloud computing.
- What is elasticity?
- Differentiate between grid and cloud computing.

Long questions

1. Explain the evolution of cloud computing from distributed, cluster, grid and utility computing.
2. Explain the five essential characteristics of the NIST model with examples.
3. Explain the advantages and disadvantages of cloud computing.
4. Explain the cloud computing reference architecture with a diagram.
5. Explain service level agreements (SLAs) and their parts.
6. Explain the economics of the cloud: capital versus operating expense, pay-as-you-go pricing and the risk of vendor lock-in.

Unit 2: Cloud Service and Deployment Models

Covers IaaS, PaaS, SaaS, deployment models and cloud architecture.

Short questions (2 marks)

- Give one example each of IaaS, PaaS and SaaS.
- What is a hybrid cloud?
- What is multi-tenancy?

Long questions

1. Compare IaaS, PaaS and SaaS with a diagram showing what the provider and the customer manage.
2. Compare public, private, hybrid and community clouds.
3. Explain the layered architecture of cloud computing.
4. Explain service-oriented architecture (SOA), REST and SOAP web services.
5. Explain the challenges of moving an application to the cloud and the steps in cloud migration.

Unit 3: Virtualisation

Covers virtualisation concepts, types, hypervisors and containers. This unit is asked heavily.

Short questions (2 marks)

- What is a hypervisor?
- Differentiate between full virtualisation and paravirtualisation.
- Differentiate between a virtual machine and a container.

Long questions

1. Explain virtualisation and its benefits.
2. Compare Type 1 (bare-metal) and Type 2 (hosted) hypervisors with diagrams and examples.
3. Explain the types of virtualisation: server, storage, network, desktop and application.
4. Explain CPU, memory and I/O virtualisation.
5. Explain live migration of virtual machines and its steps.
6. Explain containers and Docker, and compare them with virtual machines.

Unit 4: Cloud Storage, Data Centres and Programming Models

Covers storage, data centres, MapReduce and Hadoop.

Short questions (2 marks)

- Differentiate between block, file and object storage.
- What is MapReduce?
- What is HDFS?

Long questions

1. Explain cloud storage types and give an example service for each.
2. Explain the design of a cloud data centre and the need for energy efficiency.
3. Explain the MapReduce programming model with a word count example.
4. Explain the Hadoop architecture and HDFS with a diagram.
5. Explain resource provisioning, load balancing and auto-scaling in the cloud.
6. Explain the Google File System and Bigtable in brief, and how they inspired HDFS and HBase.

Unit 5: Cloud Security and Case Studies

Covers security challenges, identity and access management, and provider case studies.

Short questions (2 marks)

- What is the shared responsibility model?
- What is identity and access management (IAM)?
- Name two cloud security threats.

Long questions

1. Explain the security challenges in cloud computing: data breaches, insecure APIs, account hijacking and insider threats.
2. Explain the shared responsibility model for IaaS, PaaS and SaaS.
3. Explain IAM, encryption at rest and in transit, and key management.
4. Explain a case study of Amazon Web Services, Microsoft Azure or Google Cloud, covering compute, storage and database services.
5. Explain mobile cloud computing, edge computing and serverless computing in brief.

Sample answer outline: Compare IaaS, PaaS and SaaS

This question appears in many forms. A full answer has five parts:

1. **Define each model.** IaaS gives virtual machines, storage and networks; the customer manages the operating system and everything above it. PaaS gives a ready platform to deploy code; the provider manages the servers, operating system and runtime. SaaS gives a finished application over the internet; the customer only uses it and manages their data and users.
2. **Draw the stack diagram.** Show the layers (networking, storage, servers, virtualisation, operating system, middleware, runtime, data, application) in three columns, shading what the provider manages in each model.
3. **Give examples.** IaaS: Amazon EC2 or Azure Virtual Machines. PaaS: Google App Engine or Azure App Service. SaaS: Gmail or Microsoft 365.

4. **Add a comparison table.** Rows for control, flexibility, maintenance effort, typical users and cost model.
5. **Explain who uses which.** System administrators use IaaS, developers use PaaS, and end users use SaaS.

Close with a line on the shared responsibility model: the customer always remains responsible for their data and user access.

Marks weightage and how to write answers

A common pattern, used by AKTU and many other universities, has a compulsory short-answer section that covers every unit, followed by long-answer questions with a choice inside each unit. Marks per question change between universities and years, so confirm the scheme on a recent official paper.

- **Short answers (about 2 marks):** a crisp definition, one example or diagram, and nothing more. Three to five lines is enough.
- **Long answers (7 to 10 marks):** start with a definition, add a labelled diagram or table, explain the steps, and finish with an example, advantages or a comparison.
- Use real provider examples (AWS, Azure, Google Cloud) in answers. They show applied understanding.
- For architecture and hypervisor questions, the diagram often carries half the marks.

A 7-day revision plan for Cloud Computing

1. **Days 1 to 5:** one unit a day. Read your notes, then write the long answers for that unit from memory and check them against your notes.
2. **Day 6:** draw the reference architecture, the service model stack and the hypervisor types from memory, and write the MapReduce word count steps.
3. **Day 7:** solve one full official previous year paper in three hours, then check which units cost you time.

Keep a single sheet of formulas, definitions and diagrams for the last hour before the exam.

Frequently asked questions

Which Cloud Computing topics are most important?

The NIST definition and characteristics, service and deployment models, virtualisation and hypervisors, MapReduce and Hadoop, cloud storage and cloud security are asked most often.

Should I learn AWS or Azure for the exam?

For the exam, concepts matter more than one provider. Use AWS or Azure services only as examples. For jobs, learning one provider in depth is useful.

Is cloud computing a good career option?

Cloud skills are used in DevOps, back-end and data engineering roles. Combine the theory with hands-on practice on a free-tier account and Linux basics.

Are these Cloud Computing questions from previous year papers?

No. They are practice questions built from topics that appear in most B.Tech Cloud Computing syllabi. Use them with your own university's official previous papers, for example the AKTU archive at https://aktu.ac.in/old-question-paper.html.

Is this PDF free?

Yes. Fill in the short form on this page and the PDF downloads right away.

Sources and further reading

- AKTU: old question papers (official archive)
- NIST SP 800-145: The NIST Definition of Cloud Computing
- NPTEL: online courses from IITs (search for Cloud Computing)

About this PDF

These are practice questions for revision, prepared by the Uncodemy trainer team from common B.Tech syllabus topics. They are not past papers, a certificate or a promise of marks. Spot an error? Write to info@uncodemy.com and the team will review it.

More free resources and courses: uncodemy.com | info@uncodemy.com | +91 98183 66550