Q1: What is cloud computing and in which situation we need that?

ANS) Cloud computing delivers computing services over the internet, needed for scalable, on-demand access to resources and cost efficiency.

Q2: What are the types of cloud ? describe in details.

ANS) Cloud types include

* Public in which services via internet and it is scalable,
* Private which is dedicated resources for one organization and it is secure
* Hybrid which combines public and private and it is flexible.

Q3: Explain service model and deployment model

ANS) Service models in cloud computing include IaaS (infrastructure as a service), PaaS (platform as a service), and SaaS (software as a service), offering different levels of control and management. Deployment models include Public, Private, and Hybrid catering to varying needs for accessibility, security, and scalability in different environments.

Q4: What do you mean by Capex and Opex ? explain with example.

ANS) Capex (Capital Expenditure): refers to funds used by a company to acquire, upgrade, and maintain physical assets like buildings, technology, or equipment. For example, purchasing servers for a data center is a Capex.

Opex (Operational Expenditure): refers to the ongoing costs for running day-to-day operations. For example, paying monthly fees for cloud services is an Opex.

In essence, Capex is a one-time investment in fixed assets, while Opex is the regular, recurring expenses necessary to operate a business.

Q5: Explain Saas PaaS IaaS with appropriate example

ANS) SaaS (Software as a Service): Delivers software applications over the internet on a subscription basis. Example: Google Workspace (Gmail, Docs) allows users to access applications without installing them on local devices.

PaaS (Platform as a Service): Provides a platform allowing customers to develop, run, and manage applications without dealing with underlying infrastructure. Example: Google App Engine offers a platform for developers to build and deploy applications.

IaaS (Infrastructure as a Service): Offers virtualized computing resources over the internet. Example: Amazon Web Services (AWS) EC2 provides virtual servers and storage, enabling users to rent infrastructure without purchasing physical hardware Example S3.

Q6: Compare AWS, Azure and GCP at least basis of 5 elements.

|  |  |  |  |
| --- | --- | --- | --- |
| Category | AWS | AZURE | GCP |
| Storage | S3 | Block Storage | Cloud Storage |
| Managed data Warehouse | Redshift | SQL Warehouse | Big Query |
| Paas | Elastic Beanstalk | Cloud Services | App Engine |
| File storage | EFS | Azure Files | ZFS/ Avere |
| Serverless | Lambda | Azure Functions | Cloud Function |

Q7: What are service in Azure and AWS.

ANS) Sure, here's a brief overview of services offered by Azure and AWS:

Azure Services:

Virtual Machines (VMs), Azure Kubernetes Service (AKS), Azure Functions.

Storage: Blob Storage, Azure Files, Azure Disk Storage.

Databases: Azure SQL Database, Cosmos DB, Azure Database for MySQL.

AI and Machine Learning: Azure Machine Learning, Cognitive Services.

DevOps: Azure DevOps, Azure Pipelines, Azure Kubernetes Service (AKS).

AWS Services:

Amazon EC2, AWS Lambda, Amazon ECS.

Storage: Amazon S3, Amazon EBS, Amazon Glacier.

Databases: Amazon RDS, Amazon DynamoDB, Amazon Aurora.

AI and Machine Learning: Amazon SageMaker, Amazon Rekognition, AWS Polly.

DevOps: AWS CodePipeline, AWS CodeBuild, AWS CodeDeploy.

Q8: What is S3 bucket explain in detail.

ANS) Amazon S3 (Simple Storage Service) is an object storage service offered by AWS, designed to store and retrieve any amount of data from anywhere on the web. Here's a detailed explanation of an S3 bucket:

1. Object Storage: S3 provides object storage, which means it stores data as objects rather than as files within a hierarchical structure. Each object consists of data, metadata (attributes like creation date), and a unique identifier (key).

2. Bucket: A bucket is a container for objects stored in S3. Every object is contained within a bucket. Buckets have a globally unique name (e.g., `my-bucket`), which is used in the URL to access objects stored within them.

Q9: What is Load Balancing ?

ANS) Load balancing is a technique used in computing and networking to distribute incoming network traffic or workload across multiple servers or resources. The primary goal of load balancing is to ensure that no single server or resource becomes overwhelmed, thereby improving the overall performance, reliability, and availability of applications or services.

Q10: Explain SDLC and devops differences.

ANS)

Key Differences:

Focus: SDLC focuses on the entire software development process from planning to maintenance, ensuring software meets requirements and quality standards. DevOps focuses on integrating and automating processes between development and operations teams to achieve faster and more reliable software delivery.

Methodology vs Culture: SDLC refers to a structured methodology for software development, while DevOps is a cultural shift and set of practices aimed at improving collaboration and efficiency between teams.

Automation: DevOps places a strong emphasis on automation of build, test, deployment, and monitoring processes, whereas SDLC focuses on the stages and phases of software development.