Q.1 What is Cloud Computing?

[SPPU: Dec.-22, Marks 3]

Answer:

- Cloud computing is using internet-based services to store and access data, programs, and servers instead of keeping them on your personal computer or company server.
- It allows you to use IT services like servers, storage, databases, networking, and software directly from the internet this "internet" is called the **cloud**.
- It helps developers and companies quickly access computing resources without buying hardware.
- It reduces the cost of building and running infrastructure, and you can increase or decrease the usage as per your needs.

Easy Points to Remember:

- Cloud = Internet-based services
- No need to buy hardware
- Access from anywhere
- Save money and time

Q.2 What are the Benefits of Cloud Computing?

[SPPU: Dec.-22, Marks 3]

Answer:

1. Cost:

You only pay for what you use. No need to buy expensive servers or storage devices.

2. Performance Speed:

Cloud providers offer fast servers, so your apps and websites work quickly.

3. Productivity:

Your team can focus on coding and developing instead of setting up hardware.

4. Reliability:

Your data is backed up and stored safely. If one server fails, your work won't stop.

5. Security:

Cloud companies offer high-level security to protect your data.

6. Global Scale:

You can use cloud services from anywhere in the world, and they grow as your project grows.

Easy Points to Remember:

- Saves money
- Fast performance
- Safe and secure
- Accessible globally
- Reliable and easy to use

Let me know if you'd like the next answers (Q3 onward) in the same style.



You said:

yes

ChatGPT said:

Perfect! Let's continue with the same easy and long explanation format for the next questions:



Q.3 What are the types of Cloud Computing?

[SPPU: Dec.-22, Marks 3]

Answer:

Cloud computing is divided into different types based on the services it provides. These are:

1. IaaS (Infrastructure as a Service):

- Provides virtual machines, storage, networks, etc.
- You manage your software and applications, and the provider manages hardware.
- Example: AWS EC2, Google Compute Engine
- Easy: Like renting a computer to install your own OS and software.

PaaS (Platform as a Service):

- Provides a platform to develop and deploy your apps without managing servers.
- You just write your code; the cloud takes care of everything else.
- Example: Google App Engine, AWS Elastic Beanstalk
- Easy: Like using a ready-to-use stage to perform your act (app).

3. SaaS (Software as a Service):

- Software is hosted on the cloud and accessed by users via the internet.
- You don't install anything. Just log in and use.
- Example: Gmail, Microsoft 365
- Easy: Like using an app in a browser.

4. Serverless Computing:

- You write functions and code; the cloud runs and scales it automatically.
- No need to manage servers at all.
- Example: AWS Lambda
- Easy: You write the code, and the cloud runs it for you when needed.

Q.4 What is AWS Cloud? List Different Services Provided by It.

[SPPU: June-22, Dec.-22, Marks 6]

Answer:

- **AWS** (**Amazon Web Services**) is a popular cloud platform by Amazon that provides more than 200 services to help individuals and companies build applications and websites easily.
- It offers services like servers, storage, databases, security, networking, analytics, and artificial intelligence.
- AWS is flexible, secure, and helps businesses scale globally. It also offers "pay-as-you-go" pricing only pay for what you use.
- It is used by companies like Netflix, Samsung, BMW, and many others.

Easy: AWS is like a super powerful toolset for developers. Everything you need to build apps and websites is provided online.

Major Services in AWS:

- 1. Compute Services like EC2 to run virtual machines
- 2. Storage Services like S3, EBS to store files and data
- 3. Database Services like RDS, DynamoDB to store structured data
- **4. Security** Services like IAM, KMS to protect your system
- **5. Analytics** Tools like Athena, Redshift for big data

- 6. **Developer Tools** – CodeDeploy, CodePipeline for DevOps
- 7. **Mobile Services** – Tools for building mobile backends
- 8. **IoT** – Services for connecting devices
- 9. **Migration** – Helps you move your apps from your computer to AWS
- **10. Management Tools** Monitor and manage your apps easily

Let me know when you're ready for:

- \checkmark Q.5: What is EC2?
- Q.6: Types of EC2
- \bigcirc Q.7: What is PuTTY?
- Q.8: How to connect EC2 with PuTTY?

Would you like me to continue?

40

You said:

yes

ChatGPT said:

Awesome! Here are detailed and easy explanations for the next questions:



Q.5 What is EC2 service?

[SPPU: June-22, Dec.-22, Marks 6]

- EC2 (Elastic Compute Cloud) is a service by AWS that allows you to run virtual computers (called instances) on the cloud.
- These virtual computers work like real computers, where you can install an operating system (like Linux or Windows), software, and run your applications.
- EC2 lets you use powerful computers without buying physical hardware, so you save money and time.
- You can start or stop these virtual computers anytime and use only what you need.

- This makes it easy to build websites, apps, and other projects quickly and scale them when needed.
- **Easy:** EC2 is like renting a computer on the internet that you can control and use anytime.

Q.6 What are the EC2 types?

[SPPU: June-22, Dec.-22, Marks 3]

Answer:

AWS offers different types of EC2 instances depending on what your application needs:

1. General Purpose:

- Balanced CPU, memory, and network resources.
- Good for many common tasks.
- Example: Web servers, small databases.

2. Compute-Optimized:

- More CPU power for tasks that need lots of calculations.
- Example: High-performance web servers, scientific modeling.

3. **Memory-Optimized:**

- More RAM for apps that need to handle large data in memory.
- Example: Databases, real-time big data processing.

4. Accelerated Computing:

- Use special hardware like GPUs for heavy tasks.
- Example: Machine learning, graphics rendering.

5. Storage Optimized:

- Designed for high-speed and large data storage.
- Example: Data warehousing, large databases.

Easy: Pick the EC2 type that best fits your app's need: balanced, CPU-heavy, memory-heavy, GPU, or storage-focused.



[SPPU: Dec.-22, Marks 2]

Answer:

- PuTTY is a free program you can install on your computer to connect securely to servers over the
- It supports protocols like SSH (secure shell), which is used to safely log in to remote servers like EC2 instances.
- PuTTY lets you type commands on your computer that run on the remote server, helping you manage it.

Easy: PuTTY is like a remote control for your server, allowing you to access and control it securely from your computer.

\checkmark Q.8 How to connect EC2 instance with PuTTY?

[SPPU: Dec.-22, Marks 3]

Answer:

1. **Download PuTTYGen:**

This tool converts the .pem file (AWS key) into a .ppk file that PuTTY can use.

2. **Convert PEM to PPK:**

Open PuTTYGen, load your .pem file, and save it as a .ppk file.

Open PuTTY: 3.

Enter your EC2 instance's public IP address.

Set the username: 4.

For Linux EC2, username is usually ec2-user.

Add the PPK file:

Under "SSH > Auth" settings, browse and select your .ppk file.

Connect: 6.

Click "Open" to connect to your EC2 instance securely.

Easy:

- Convert AWS key file to PuTTY format
- Open PuTTY, enter IP and username
- Use the key file to log in

Would you like me to continue with the next set about AWS Load Balancer, VPC, and Storage?

4.1-mini

You said:

yes give me all ans

ChatGPT said:

Great! Here are detailed and easy explanations for the next important AWS questions:

Q.9 What is Elastic Load Balancer and explain its working?

[SPPU: June-22, Marks 5]

Answer:

- Every app needs to handle many users and requests efficiently.
- When too many requests come to a single server, it gets overloaded and slows down or crashes.
- Elastic Load Balancer (ELB) is a service by AWS that spreads incoming traffic across multiple servers (EC2 instances).
- This makes the app faster, more reliable, and highly available (always accessible).
- ELB monitors the health of servers and stops sending traffic to unhealthy ones until they recover.
- You can create and manage load balancers easily via the AWS Console.

How ELB Works:

- Client sends a request to ELB.
- ELB checks which servers are healthy.
- It forwards the request to one of the healthy servers.
- If a server is down, ELB reroutes traffic to others.

Easy: ELB is like a traffic police directing users to different servers so no one server gets overloaded.

Q.10 Explain in detail types of Elastic Load Balancer.

[SPPU: June-22, Marks 6]

There are three main types of AWS load balancers:

1. Classic Load Balancer (CLB):

- The original load balancer for EC2.
- Works on connection level and request level.
- Doesn't support advanced routing like path or host-based routing.
- Suitable for simple load balancing needs.

2. Network Load Balancer (NLB):

- Works at the transport layer (TCP/SSL).
- Can handle millions of requests per second.
- Very fast and reliable for handling sudden and high volumes of traffic.
- Supports static IPs and elastic IPs.

3. Application Load Balancer (ALB):

- Works at the application layer (HTTP/HTTPS).
- Supports advanced routing like path-based (URL paths) and host-based (domain names) routing.
- Useful for modern web apps and microservices architecture.
- Inspects incoming requests and routes them based on rules.

Easy:

- CLB: Simple, old-school load balancing.
- NLB: Super fast for TCP traffic.
- ALB: Smart, for web apps with flexible routing.

Q.11 What is AWS VPC?

[SPPU: Dec.-22, Marks 3]

- **VPC** (**Virtual Private Cloud**) is a virtual network inside AWS where you can place your AWS resources like servers and databases.
- It gives you full control over the network, like IP addresses, subnets, route tables, and security settings.

- VPC lets you isolate your resources from others and secure your cloud environment.
- It's like your own private data center in the cloud.
- Resources in a VPC communicate securely using IPv4 or IPv6.
- There are two types of VPCs:
 - **1. Default VPC** Automatically created by AWS for ease.
 - 2. User-defined VPC You create and customize as per your needs.
- **Easy:** VPC is your private area in AWS where your cloud computers and databases live safely.

Q.12 What are the advantages of VPC?

Answer:

- You can change security group settings (firewall rules) for your EC2 instances anytime.
- Assign static IP addresses that don't change even if the instance restarts.
- Use Access Control Lists (ACLs) to add extra security layers.
- Assign multiple IPv4 addresses to an instance.
- Control both inbound and outbound network traffic precisely.
- **Easy:** VPC gives you full power to protect and control your cloud resources like a real private network.

Q.13 What are the different components of VPC?

[SPPU: June-22, Dec.-22, Marks 5, 3]

- 1. **Subnet:** A smaller network segment inside a VPC to group resources.
- 2. Internet Gateway: Connects your VPC to the public internet.
- **3. NAT Gateway:** Allows private resources to access the internet securely without exposing them.
- **4. Virtual Private Gateway:** Connects your VPC securely to your on-premises network via VPN.
- **5. Peering Connection:** Connects two VPCs so they can communicate privately.
- **6. VPC Endpoints:** Allows private access to AWS services without going through the internet.

- 7. Egress-only Internet Gateway: Lets IPv6 traffic go out to the internet but not come in.
- **Easy:** These components help build and manage your private cloud network safely and flexibly.

\checkmark Q.14 Explain the concept of AWS storage.

Answer:

- AWS Storage means saving your data on the internet securely and flexibly.
- Cloud storage is managed by AWS, so you don't worry about hardware failures or backups.
- It's cost-effective since you pay only for what you use.
- Different storage types are available depending on your data type and usage frequency.
- Easy: Store your files and data safely on AWS cloud, accessible anytime from anywhere.

Q.15 Explain any three AWS storage services.

[SPPU: June-22, Dec.-22, Marks 6]

Answer:

1. Amazon S3 (Simple Storage Service):

- Stores any type of file or data.
- Used for websites, backups, apps, and more.
- Very durable and secure with encryption options.
- You organize files in buckets and folders.

2. Amazon S3 Glacier:

- Used for long-term archival storage (data you don't access often).
- Very cheap and secure.
- Retrieval time is longer, so it's for backup and compliance data.

3. Elastic Block Storage (EBS):

- Like a hard disk attached to your EC2 instance.
- Stores data in blocks and can be used to install operating systems.
- Comes in SSD or HDD options for performance or cost optimization.

Easy:

- S3: Store files online like in a folder.
- Glacier: Store old files cheaply for long time.
- EBS: Hard drive for your cloud computer.

Q.16 What is S3 bucket?

[SPPU: Dec.-22, Marks 6]

Answer:

- An S3 bucket is a container where you store your files (called objects) in Amazon S3.
- You can create many buckets, but each bucket name must be unique worldwide.
- Inside a bucket, you can create folders to organize your files.
- You use buckets to store anything from images to videos, backups, or website data.
- **Easy:** S3 bucket = a big online folder where you save all your files safely.

Q.17 List steps to deploy website on EC2.

Answer:

- 1. Connect to your EC2 server using PuTTY.
- 2. Update your Ubuntu server with the command sudo apt-get update.
- 3. Install Apache Web Server using sudo apt-get install apache2.
- 4. Open AWS EC2 security group settings, go to **Inbound rules**, and add an **HTTP** rule allowing traffic from anywhere.
- 5. Open your web browser, enter your EC2 public IP address, and check the Apache welcome page.
- 6. Upload your website files (HTML, CSS, JS) to /var/www/html folder on the EC2 server.
- **Easy:** Connect \rightarrow Update \rightarrow Install Apache \rightarrow Allow HTTP \rightarrow Upload files \rightarrow Open website.

Q.18 How to update the Ubuntu server?

Answer:

Run this command in your terminal:

bash

CopyEdit

sudo apt-get update

It refreshes the list of available software and updates packages.

Easy: This command keeps your server software fresh and up to date.

Q.19 What is the default port no for HTTP protocol?

Answer:

- The default port number for HTTP is **80**.
- For HTTPS (secure HTTP), the default port is **443**.

Easy: Web browsers connect using port 80 for normal websites and 443 for secure ones.

If you want, I can help you with more questions or summarize any topic. Just let me know!

4.1-mini

You said:

main types of AWS load balancers: difference between

ChatGPT said:

Here's a simple and clear comparison of the **main types of AWS Load Balancers** with their differences:

Feature	Classic Load Balancer	Network Load	Application Load Balancer
OSI Layer	Works at Layer 4 (Transport) & Layer 7	Works at Layer 4 (Transport)	Works at Layer 7 (Application)
Use Case	Basic load balancing for EC2-Classic instances	High performance, low latency, TCP	Advanced routing for HTTP/ HTTPS apps
Routing	Simple round-robin or sticky sessions	Routes TCP traffic based on IP and port	Supports host-based and path-based routing
Performa nce	Moderate	Very high, can handle millions of requests	Moderate, designed for HTTP/ HTTPS traffic
IP Address	Dynamic IP only	Supports static IP addresses and Elastic	Dynamic IPs
Health	Basic TCP/HTTP health	Advanced TCP health	HTTP/HTTPS health checks with
Security Features	Supports security groups	Supports security groups	Supports security groups and Web Application Firewall (WAF)

Sticky	Supported	Not supported	Supported
Cost	Usually lower	Slightly higher due to high performance	Moderate cost

Easy summary:

- **CLB**: Old and simple, good for basic needs.
- **NLB**: Fast and powerful, best for heavy TCP traffic.
- ALB: Smart and flexible, best for modern web apps with complex routing.

If you want, I can also help you with examples or how to choose one!

4.1-mini

You said:

Subnet: A smaller network segment inside a VPC to group resources. Internet Gateway: Connects your VPC to the public internet. NAT Gateway: Allows private resources to access the internet securely without exposing them. Virtual Private Gateway: Connects your VPC securely to your onpremises network via VPN. Peering Connection: Connects two VPCs so they can communicate privately. VPC Endpoints: Allows private access to AWS services without going through the internet. Egress-only Internet Gateway: Lets IPv6 traffic go out to the internet but not come in. explain in simple term

ChatGPT said:

Sure! Here's a simple explanation of each term in easy words:

• Subnet:

It's like a smaller neighborhood inside your big network (VPC) where you keep related computers or resources together.

• Internet Gateway:

It's a gate that connects your private network to the internet so your resources can talk to the outside world.

NAT Gateway:

It's a helper that lets private computers use the internet safely without letting the internet come directly to them.

Virtual Private Gateway:

It's a secure tunnel that links your cloud network to your office or home network using VPN, so they can communicate safely.

• Peering Connection:

It's a private road between two cloud networks (VPCs) so they can share information directly without going on the public internet.

• VPC Endpoints:

It's a shortcut inside your network that lets your resources connect to AWS services without using the internet, keeping things safer and faster.

• Egress-only Internet Gateway:

It's a one-way door for IPv6 traffic, allowing your network to send data out to the internet but blocking incoming data from outside.