1) What is the GCP project quota? If necessary, how GCP quota can be increased?

Ans.Quotas protect the Google Cloud Community from unforeseen spikes in usage. However, as your usage of Google Cloud Platform increases, you can request an increase in your quota.

When Google Cloud allocates resources to customers, we consider a variety of factors, including resources that most legitimate customers use, customer’s previous usage and history with Google Cloud, and previous abuse penalties. Customers might have different quota based on these and other factors.

**To request a higher quota limit by using the Google Cloud console:**

1. Go to the Quotas page: ...
2. On the Quotas page, find the quota you want to increase in the Quota column. ...
3. Select the checkbox to the left of your quota.
4. Click create EDIT QUOTAS.

2) What is the definition of a virtual machine? Virtual machine types are offered in GCP. How to create a virtual computer in Google Cloud Platform.

Ans. A virtual machine (VM) is **a digital version of a physical computer**. Virtual machine software can run programs and operating systems, store data, connect to networks, and do other computing functions, and requires maintenance such as updates and system monitoring.

* On this page.
* E2 machine series. E2 shared-core machine types. E2 Limitations.
* N2 machine series.
* N2D machine series.
* Tau T2D machine series. Tau T2D Limitations.
* Tau T2A machine series (Preview) Tau T2A Limitations.
* N1 machine series.
* Custom machine types.
* In the Google Cloud console, go to the VM instances page. ...
* Select your project and click Continue.
* Click Create instance.
* Specify a Name for your VM. ...
* Optional: Change the Zone for this VM. ...
* Select a Machine configuration for your VM.

3) What is Google Big Query, and how does it work? Replicate certain instances to demonstrate a use case.

Ans.BigQuery is a fully-managed, serverless data warehouse that enables scalable analysis over petabytes of data. It is a Platform as a Service that supports querying using ANSI SQL. It also has built-in machine learning capabilities.

**Replicating data from MySQL to BigQuery**

1. On this page.
2. Objectives.
3. Costs.
4. Before you begin.
5. Install MySQL in Compute Engine.
6. Enable replication in your MySQL database.
7. Create and run a Cloud Data Fusion Replication job. Upload the JDBC driver. Create the pipeline. Start the pipeline. ...
8. View the results in BigQuery.

4) What exactly is the Google Cloud SDK?  List the numerous Google cloud SDK installation options.

Ans. **Google Cloud CLI lets you manage resources and services from the command line**. It also contains service and data emulators to speed up local development. Cloud Shell lets you code or use a terminal directly in the web-browser. Cloud Code provides IDE extensions for VSCode and IntelliJ. Components are the installable parts of the Google Cloud CLI. A component can be a command-line tool ( gcloud , bq , and gsutil ), a set of gcloud CLI commands at the Alpha or Beta release levels, or a package that contains dependencies used by a tool in the gcloud CLI.

5) List the many cloud computing deployment models.

Ans. The cloud deployment model identifies the specific type of cloud environment based on ownership, scale, and access, as well as the cloud’s nature and purpose. The location of the servers you’re utilizing and who controls them are defined by a cloud deployment model. It specifies how your cloud infrastructure will look, what you can change, and whether you will be given services or will have to create everything yourself. Relationships between the infrastructure and your users are also defined by cloud deployment types.

Different types of cloud computing deployment models are:

1. Public cloud
2. Private cloud
3. Hybrid cloud
4. Community cloud
5. Multi-cloud

6) Describe the Google cloud platform's security features.

Ans. Google Cloud Platform Security Products Features Include:  
  
Network Security: Google Cloud's network security products include **Virtual Private Cloud, Cloud Load Balancing, Encryption, and Application Layer Transport Security** to help customers define, enforce, and secure their perimeter.

7) What exactly is vertex AI? With some usage scenarios, implement vertex AI.

Ans.Vertex AI Workbench is **the single environment for data scientists to complete all of their ML work, from experimentation, to deployment, to managing and monitoring models**. It is a Jupyter-based fully managed, scalable, enterprise-ready compute infrastructure with security controls and user management capabilities.