

# *Department Of Computer Science*

## *Gujarat University*



## *Certificate*

*Roll No: 15*

*Seat No: \_\_\_\_\_*

*This is to certify that Mr. / Ms. LUVHAR PRINCE KUMAR GHISULAL student of MCA Semester – III, has duly completed his/her term work for the semester ending in December 2021, in the subject of CLOUD COMPUTING – towards partial fulfillment of his / her Degree of Masters in Computer Science & Application.*

*13-DEC-2021  
Date of Submission*

*DR.HARDIK JOSHI  
Internal Faculty*

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Head of Department*

# Assignment

- Discuss each of the Google cloud services  
In 2-3 lines mention in following table

## Compute

### 1) Compute Engine (Iaas)

- It is a service that is secure and customizable Compute service that lets you create and run virtual machine on google's Infrastructure.

### 2) APP Engine (PaaS)

- It is used to build highly scalable applications on a fully managed Serverless platform

### 3) Cloud foundation (Faas)

- Cloud foundation is Scalable Pay-as-you-go ~~or~~ function as a service (Faas) to run your code with zero server management.

## Containers

### 4. Google Kubernetes Engine (Caas)

- It is a simple way to automatically deploy, scale & manage Kubernetes.
- It is secure by default including vulnerability scanning of container images and data encryption.

#### 4) Cloud Run (Containers without Infrastructure).

- It is Develop and highly Scalable Containerized application on a fully managed Server less Platform.

#### 5) Container registry (Container registry)

- It Stores, manage & Secure the Docker Container images
- Its locked down the risky Images.
- It has fast highly availability Access.

### Networking

#### 6) Virtual Private Cloud (VPC) (Virtual Network)

- Global ~~virtualization~~ network that spans all region.
- It automatically Setup your virtual topology Configuring prefix ranges for your Subnet & Network Policies. or You can Configure your own

#### 7) Cloud Load balancing (Load balancer)

- It is a fully distributed, Software-defined managed, service for all traffic.
- It provides high Performance, Scalable & load balancing on TCP.

- 8 Google Cloud InterConnect (Dedicated interconnect).
- It Connect Infrastructure to Google Cloud from Anywhere.
  - It Provide Connection for Any workloads.
  - It Provide Unlimited bandwidth with Access google Services.

9) Cloud DNS (Domains and DNS)

- Reliable, Resilient, low latency DNS Serving from google worldwide N/W with everything you need to register, manage & serve your domains.

10) Cloud CDN (CDN).

- fast, reliable web and video Content delivery with global scale and reach

11) Google Cloud Armor (DDoS firewall).

- Its help to protect Your applications and website Against denial of Service & web attacks.

## Storage

### (ii) Cloud Storage (Object Storage)

- It is used to store Object Storage for Companies of all sizes. Store Any amount of data and Retrive it as often you'd like.

### 13 Persistent Disk (Block Storage)

- It provide Reliable, high Performance block Storage for virtual machine instances

### 14 Cloud Storage Nearline and Cloud Storage Coldline (Reduced availability Storage)

- It is Highly available, affordable solution for backup, archival and disaster recovery

### 15 Cloud Storage Archive ~~service~~ (Archival Storage)

- A Cloud ~~service~~ archive is a storage as a service for long term data retention.

## 16 File Store (File Storage)

- It provides high performance.
- And it fully managed file storage.
- Protect the data with backup & snapshots.

## 17 Memory Store (In-memory data store)

- It reduces the latency with Scalable, Secure and highly available In memory Service for redis and memcached.

## Database

### 18 Cloud SQL, Cloud Spanner (RDBMS)

- Cloud SQL :- fully managed relational database services for MySQL, PostgreSQL and SQL Server.
- Cloud Spanner :- Fully managed relational db with unlimited scale, strong consistency and upto 99.999% availability.

## 19 Bigtable, Firestore (NoSQL: Indexed)

→ Cloud BigTable.

- A fully managed, scalable, NoSQL DB service for large analytical and operational workloads with 99.99% availability.

→ Firestore:

- Easily develop rich applications using a fully managed, scalable & serverless document database.

## 20 In memory data store (Memory Store)

→ Reduce latency with Scalable, secure and highly available in memory service for Redis and Memcached.

## Data Analytics

### 21 BigQuery (Data Warehouse)

- Serverless, highly scalable & cost effective multicloud data warehouse designed by business guilty.

## 22) BigQuery (Query Services)

- Serverless, highly Scalable and cost-effective multi-cloud data warehouse designed for business agility.

## 23) Pub/Sub (Messaging)

- Ingest events for streaming into BigQuery, data lakes or operational databases.

## 24) Data Proc / Dataflow (Batch data Processing)

### → DataProc

DataProc is a fully managed and highly Scalable Services for running Apache Spark, Apache Flink, Presto and 30+ open source tools & frameworks.

### → Dataflow

Unified stream and batch data processing that's serverless, fast & cost effective.

## ~~Stream~~

### 25 Dataflow (Stream data Processing)

Unified Stream and batch data Processing  
that's Serverless fast & cost effective.

### 26 Pub/Sub (Stream data ingest Workflow)

- Ingest events for streaming into BigQuery, data lakes or operational databases

### 27 Cloud Composer (Workflow orchestration)

- A fully managed workflow orchestration service built on Apache Airflow.
- frees you from lock-in and is easy to use.

## Management tools

### 28 Cloud deployment Manager (Deployment)

- It is an Infrastructure deployment Services that automates the creation & management of Google Cloud resources.

## Cost Management

### 29) Cost Management (Cost Management)

- It is tools for monitoring, controlling, and optimizing the cost.
- Optimize your cloud costs of usage with intelligent recommendations.

## Operations

### 30) Cloud Monitoring (Monitoring)

- Gain visibility into the performance availability and health of your applications & Infrastructure.

### 31) Cloud Logging (Logging)

- fully managed real time log management with storage, search, analysis & alerting at exabyte scale.

### 3x) Cloud Audit log (Audit logging).

Gain Visibility into who did what and where for all users activity on Google Cloud Platform.

### 33) Cloud Debugger (Debugging)

- Cloud debugger is a feature of Google Cloud that lets you inspect the state of your running application in real time without stopping or slowing it down.

### 34) Cloud Trace (Performance tracing)

→ Cloud Trace is a distributed tracing system that collects latency data from your applications and display it in the Google Cloud Console.

## Security & Identity

### 35) Cloud Identity and Access Management (IAM)

- Identity & Access Management (IAM) lets administration ~~authorise~~ authorize who can take action on specific resource, giving you full control and visibility to manage Google Cloud resource centrally.

### 36) Secret manager (Secret management)

- Secret manager is a secure convenient storage system for API keys, Password, certificates and other sensitive data.

### 37) Cloud Key management Services (Encrypted Keys)

- manage encryption keys on google cloud
- It provide helps satisfy compliance, privacy and security needs.
- provide fast cloud key management

### 38) Cloud Asset Inventory (Resource monitoring)

- A metadata Inventory Service that allow you to view, monitor and analyze all your GCP and Anthos assets across projects and services.

### 39) web security Scanner (Vulnerability Scanning)

- It is a ~~central~~ Google Cloud centralized vulnerability & threat reporting services. It's help you to strength your security posture by evaluating your security & data surface attacks.

### 40) Event Thread Detection (Threat Detection)

- It provide security & Risk management platform for Google Cloud.
- Detect threats Using logs running in the google cloud at Scale

### iii) Managed Service for Microsoft Active Directory (Microsoft Active Directory)

- It offers high-availability, hardened Microsoft Active Directory Domains hosted by Google Cloud. It service helps to reduce the sensitive but mundane administrative task required to manage while Active Directory footprint on Google Cloud.

### 42) Machine learning

#### 42) Speech-to-Text (Speech)

- Accurately convert speech into text using an API powered by Google's AI technologies.

#### 43) Cloud Vision (Vision)

- Derive insights from your images in the cloud or at the edge with Auto ML Vision or pre-trained vision API models to detect emotion, understand text & more.

## 44) Cloud Natural Language API (Natural Language Processing)

- It is Powerful Pre-trained models of the Natural language API empowers developers to easily apply Natural language Understanding to their application with features including Sentiment Analysis, entity analysis, entity Sentiment analysis.

## 45) Cloud Translation (Translation)

- make your Content and apps multilingual with fast, dynamic machine translation.

## 46) Dialogflow Enterprise edition (Conversational Interface)

- Reduce development time with interactive flow visualization that allow builders to see quickly, understand & edit & share their work

## 47) Video Intelligence API (Video Intelligence)

- It has a Pre-trained ML models that automatically recognize a vast number of objects, place & action in stored and streaming video.