TOPIC	Question	Answer
05_GCE_LB(For Architects)	How to be Cost efficient when dealing with VM's provisioning ? Name 4 ways	- Apply Auto scaling - Be aware of Sustained use discount - Use Committed use discount - Use preemtible VM's for your fault tolerant workloads
08_APP_ENGINE	Compare between Standard & Flexible App Engine in Max Req Timeout	Standard between 1 to 10 minutes but Flexible is 60 minutes
08_APP_ENGINE	What are the 3 parameters based on which we may configure the Automatic scaling in App Engine?	- Target CPU utilization - Target throughput utilization - Max concurrent requests
23_HYBRID_CLOUD	What is the service used to connect the on-premise to my cloud?	Cloud VPN
32_GCP_SERVICES_2	Regarding ML, GCP provides 5 main services to benefit from ML, name them	1- Prebuilt API's (Vision API, NLP API, Speech-to-text API's...) 2- Cloud AutoML (Build custom ML models with less experience.) 3- AI Platform (Based on Tenserflow which is serverless and helps training and serving) 4- Data Management (BQ ML, Cloud Sotrage) 5- Automation and Instrumentation
14_CLOUD_STORAGE	What is the committed SLA for multi region and single region for Standard, Nearline and Coldline storage classes?	99.95% for multi region and 99.9% for single region
09_GKE	What the recommended approach to expose a microservice? and why?	Using NodePort servcie type. We will be using single LB for all Microservices
02_GCE(Google Cloud Engine)	What e2-standard-2 has each part standing for?	e2: machine family standard: machine type 2: cpu number
14_CLOUD_STORAGE	What is bad practise to use in naming objects in GCS bucket?	Using Timestamps or sequential numbering (randomness is important). You can add a hash in front of the timestamp
15_IAM	For a shor-lived connection between an on-prem app and gcp resources, what is recommended approach?	OppenID Connect ID token
10_CLOUD_FUNCTIONS	What is the main difference of second generation from the 1st generation in CF?	The latter is built on top of Cloud run and Eventrac
24_BIGQUERY	BQ is serverless	TRUE
08_APP_ENGINE	When deploying a new version of app, the old version goes stale	FALSE. Only the new version is running. Both are running but only the new one is serving traffic
04_GCE_LB(Cloud Load Balanc	Explain Auto Scaling in LB	LB autoscale based on traffic

25_DATA	In the stage 4, Visualization and Exploring, name 5 tools we might use	1- BQ 2- Cloud Datalab (Based on Jupyter notebooks) 3- Cloud Data studio 4- Cloud Data catalog
13_BLK_FILE_STORAGE	You can attach a new PD to your VM, what are the 3 types you may choose from?	1- Blank Disk 2- Image 3- Snapshot
16_DATABASES	Cloud BigTable is not recommended for transactional workloads because it supports only Single-Row transactions	TRUE
08_APP_ENGINE	Compare between Standard & Flexible App Engine in Pricing Factor	Standard hourly but Flexible on Resources (vCPU, Mem, PD)
18_NETWORKING	In Custom mode VPC, what are the 2 essential options to pick while creating Subnets?	1- Enable Private Google Access (Enable VM's to communicate to Google API's through private IP's) 2- Enbale Flowlogs (to troubleshoot any VPC related network issues)
30_MIGRATION	In Migration Phase 1, we have 4 steps to take, name them	1- Take an inventory and Catalog the apps 2- Experiment and run PoC 3- Calculate the cost of ownership 4- Choose which workloads to migrate first (based on business value, teams, dependencies, refactoring...)
24_BIGQUERY	How can we pay less for stored data in BQ?	By setting expiration
02_GCE(Google Cloud Engine)	What are the machine families and give examples?	- General Purpose: N2, E1 - Memory Optimized: M1 - Compute Optimized: C1
20_RESOURCES_ORGANIZATIO	IAM Policy can be set at any level of the Org. hierarchy (Org. -> Folder -> Project -> Resouce)?	TRUE
27_DEVOPS_SDLC_AGILE	DevOps - CI/CD is about 3 main continuitiesm, what are they?	1- Continuous Integration (unit testing and packaging) 2- Continuous Deployments (Deployments to test environments) 3- Continuous Delivery (Delivery to production)
32_GCP_SERVICES_2	Event driver architecture is a way to implement microservice arch. name the service GCP offers	Eventarc
21_PUB_SUB	How the messages are received by clients subscribed? 2 different mechanism with pulling	1- Clients pull same subscription => messages are split between them 2- Clients pull with different subscription => every client receives same message
14_CLOUD_STORAGE	How can we lock objects in cloud storage?	By setting up Retention Policy with a Retention Period

14_CLOUD_STORAGE	In Lifecycle Management, what are the 2 possible actions we can do?	setStorageClass and Delete
16_DATABASES	What is the name of GCP service for memory DB?	Memory Store
18_NETWORKING	VPC is a global resource	TRUE
33_GOOGLE_ARCHITECTURE_	In Reliability principle, Incident Mangement is crucial, we talk often of 4 MTXY, name them?	1- MTTD (Mean Time To Detect) 2- MTTM (Mean Time To Mitigate) 3- MTTR (Mean Time To Recover) 4- MTBF (Mean Time Between Failures)
22_DATAFLOW	Give the pipeline to create in case of streaming data	Pubsub -> Dataflow -> BigQuery
31_ARCHITECT_RESPONSIBILIT	What GCP service allows us to manage access with allowlist and denylist (of IP addresses to access)	Cloud Armor
17_NOSQL	What the "Wide Column Datbase" mean in Cloud Bigtable?	Columns are grouped in column families
14_CLOUD_STORAGE	What is an appliance transfer?	It is a physical device that is used to Copy, Ship and Upload data to GCS
14_CLOUD_STORAGE	What is the first best step to take when starting migration from On-Premise to GCP?	Transfer data to Cloud Storage
13_BLK_FILE_STORAGE	Does local SSDs support snapshots?	FALSE
24_BIGQUERY	BQ must copy data internally to be able to query it	FALSE. It creates tables first and query them later. No need to copy data. But we may use permanent or temp tables
23_HYBRID_CLOUD	What are the 2 types of VPN provided?	1- HA VPN (SLA 99.99%, provided 2 external IP's) 2- Classic VPN (SLA 99.9%, provides a single IP)
19_OPERATIONS	What Cloud Trace is for?	Collect latency data between different services (like tracing request between microservices)
05_GCE_LB(For Architects)	What is the condition that make usage of GPU in a GPU instance?	Use images with GPU libraries installed
16_DATABASES	What is the best techniques to use if I can tolerate few hours of downtime but an RPO of 1 minute?	Recover from Snapshots and Transactions Logs
18_NETWORKING	What are the 2 modes to create VPC in GCP?	Auto & Custom
19_OPERATIONS	What are the 2 types of Logs Buckets?	1- _Required: Holds admins Activity and System Events & Access transparency Logs (retained for 400 days, zero charge, can not be deleted, retention period immutable) 2- _Default: Holds all other logs (retained for 30 days and can be changed, bucket can not be deleted)
16_DATABASES	BigTable is servless	FALSE
24_BIGQUERY	In case of choosing between Partitioning and Clustering, which criteria we may go for to make the choice?	We better not creating too many partitions with less than 1GB. Switch to clustering in that case

12_CLOUD_KMS	What is a Key Ring?	It is the a Key Holder towhich you can attache multiple keys
21_PUB_SUB	How can we enable deduplication in messages?	By using Dataflow in between (messages will be given ID's and then discard duplicate ones)
25_DATA	In the stage 3 of data lifecycle (Process & Analyze), name 4 main services we can use at this stage	1- Dataprep (to clean and prepare data, Fully managed service) 2- Cloud Data Loss Prevention (CDLP) for scanning and disovery of data in storages. It does the masking the tokenization etc... 3- Dataflow 4- Dataproc
16_DATABASES	Name 5 good things for Firestore (from transaction, experience and size perspective)	1- ACID transactions 2- SQL-Like queries 3- Indexes 4- Strong consistency 5- 0 to few TB's
19_OPERATIONS	What are the 3 main parts of Cloud Monitoring tool?	1- Metrics to measure against 2- Dashboards 3- Alerts
18_NETWORKING	How Subnetting supports HA?	By having subnets in different regions (span accross zones) you can create multiple instances in different regions for HA
16_DATABASES	For OLAP need what is the recommende GCP service?	BigQuery (PB's scalability data warehouse)
02_GCE(Google Cloud Engine)	What makes the OS Login option better when dealing with many users than managed Metadata ?	Metdata managed is centralized where we put all public keys. But OS Login is individualized
32_GCP_SERVICES_2	Cloud DNS provide private DNS service as public one	TRUE
24_BIGQUERY	We may use 2 techniques to reduce BQ cost, name them	1- Partitioning: divide table into segments (like by date) 2- Clustering: grouping data (like by category)
28_RELEASE_MANAGEMENT	Deployment Approach: RECREATE	Kill Version 1 then Deploy Version 2
05_GCE_LB(For Architects)	How to make HA GCE?	- Multiple regional MIG - Configure HC at instance level - Enable live migration
03_GCE_MIG(Managed Instan(	What are the two types of IG? What is the difference?	- Managed and Unmanaged - The MIG support auto scaling, autohealing and release management. They are created with single instance template
23_HYBRID_CLOUD	Static VPN support both Dynamic Routing and Static Routing	FALSE
27_DEVOPS_SDLC_AGILE	In SRE best practises, in microservices arch. we need to avoid thrashing (failure cascading), name the techniques and explain it with 2 microservice A and B	We implement a Circuit breaker. If B is overloaded and A keeps sending requests to B, we should stop this and send back some hardcoded data by reducing the QoS
17_NOSQL	How to export from Cloud Bigtable?	Java jar, HBase API, Dataflow

31_ARCHITECT_RESPONSIBILIT	How an does Architect measure the meeting of Business Objectives?	By setting up KPI's. 1- Project KPI's like number of new customers per week 2- Operational KPI's like operational cost per customer
18_NETWORKING	What is the most need of subnets	To separate public resources (ex. LB) from private ones (ex. DB)
28_RELEASE_MANAGEMENT	CANARY approach needs backward compatibility	TRUE
21_PUB_SUB	Snapshot a point in time status of a:	Subscription (not topics)
14_CLOUD_STORAGE	What is the structure of a Lifecycle rule?	a lifecycle object is composed of rules, each rule is composed of action and condition
19_OPERATIONS	It is preferable to store logs in other places (for actions, retention etc..), what are the 3 main services we could sink logs into?	1- Cloud Storage Buckets (ex. bucket/syslog/2025/01/01) 2- Big Query dataset (table syslog_20250101 > columns timestamp, log) 3- Pub/Sub topic (base64 encoded log entries)
02_GCE(Google Cloud Engine)	Can reserved internet IP addressed moved between projects?	TRUE
13_BLK_FILE_STORAGE	Name 2 reasons you may go for with Machine Image	1- Disk backup 2- Instance cloning and replicating (to other regions for ex.)
03_GCE_MIG(Managed Instan	What are the 3 types of aut-scaling in MIG?	Off, On (remove and add instances), Scale Out (only add)
13_BLK_FILE_STORAGE	What is the difference between a Snapshot and an Image?	A snapshot is an incremental backup of the disk (fast) but an image is a full backup of the disk (slow, it backups even unused spaces and unnecceray data)
28_RELEASE_MANAGEMENT	When updating MIG, we might use CANARY release approach, the command needs 2 parameters	the 2 options are --canary-version that takes the template and --target-size the defines the percentage of instances to update.
03_GCE_MIG(Managed Instan	What are the 2 methods of MIG updating?	Proactive (immediate) and Optimistic
05_GCE_LB(For Architects)	What resiliency is?	Ability of the system to provide acceptable behavior when part or parts fail
15_IAM	When creating a Role, what are the 4 launching stage of a role?	Alpha Beta General Availability Disabled
16_DATABASES	For Cloud SQL, what are the 2 pre requisites to enable to have HA and Failover?	Automated Backups, Binary Logging
06_GCLOUD	How to use filter in gcloud command? filter machine types in zone asia-southeast-b	--filter zone:asia-southeast-b

31_ARCHITECT_RESPONSIBILIT	An Architect must know is UNDERSTANDING BUSINESS REQUIREMENTs. Starting with Reducing Cost as example. He must understand TCO, explain it	TCO is for Total Cost of Ownership like: - Licencing cost - Compute cost - Storage cost - Netwroking cost - Personnel cost
02_GCE(Google Cloud Engine)	What is the manual approach in case the move command is not applicable? It is in 3 steps	1- Create snapshot of the PD 2- Copy the snapshot in the zone/region destination 3- Create the new VM with this snapshot
15_IAM	What is the security mechanism of an SA?	It uses a private/public RSA key-pairs
02_GCE(Google Cloud Engine)	How can I delete a static iP address?	By command: gcloud compute addresses delete ADDRESS --project PROJECT --region REGION
31_ARCHITECT_RESPONSIBILIT	To protect yourself from DDoS, you may follow 4 main practises, name them:	1- Reduce the surface attack (By using subnetworks and networks and Firewalls and IAM) 2- Isolate your internal traffic (by using IP addresses and private LB) 3- Use proxy-based LB (protects you from layer 4 attacks and below) 4- Integrate your LB with Cloud Armor (provides geo-based and IP-based attacks)
31_ARCHITECT_RESPONSIBILIT	How Architect plans for HA? From Cloud Datastore perspective	Use multi-regions locations
17_NOSQL	Why a pre-test with at least 30 GB is required while designint our Bigtable?	To allow Bigtable learn distribute reads and writes evenly and efficiently accross all cluter nodes
05_GCE_LB(For Architects)	How to make a HA LB?	- Use global LB - Configure Health Check
16_DATABASES	What is the latency for memory db?	Micros
20_RESOURCES_ORGANIZATIO	From Focus perspective, what is the main diff between IAM and OPS?	IAM focuses on WHO and OPS on WHAT
21_PUB_SUB	What is Pub/Sub Lite?	It is the zonal version of Pub/Sub
32_GCP_SERVICES_2	Eventarc is based on GCP service in the background, name it?	Cloud Pub/Sub
19_OPERATIONS	Cloud Loggin can not ingest logs from application inside gcp, it only logs GCP Services	FALSE
24_BIGQUERY	Name the 3 levels we can set expiration to?	L1: Dataset L2: Table L3: Partition

13_BLK_FILE_STORAGE	What are the steps to mount a data PD?	1- Attach disk to running vm by gcloud compute instances attach-disk ... 2- format disk by sudo lsblk then sudo kfs.ext4 ... 3- mount the disk by 3.1- Create themount directory 3.2- sudo mount ... 3.3- provide permissions by chmod ...
18_NETWORKING	What are the 4 rules coming with default VPC, with priority 65534?	1- default-allow-internal 2- default-allow-ssh 3- default-allow-rdp 4-default-allow-icmp
18_NETWORKING	While creating a subnet, in the process of VPC creation, there is no option to make the subnet private/public	TRUE (it should be flexible we will configure its capabilities later with the Firewall rules and Security ilsts); (there is an option to select based on the rules will be created and the sbubet will be label private/public)
05_GCE_LB(For Architects)	What we call a discount that is useful for workloads with predictible resources?	Committed use discount
14_CLOUD_STORAGE	In case of 5xx or 429 (to many requests) errors, what is the best approach to implement the retrial mechanism?	Exponential Backoff
28_RELEASE_MANAGEMENT	Recreate approach needed backward compatibility (data and application)	FALSE
03_GCE_MIG(Managed Instan	What the 4 main criteria for a Health Check?	1- Check INterval 2- Timeout 3- Healthy Threshold 4- Unhealthy Threashold
12_CLOUD_KMS	What are the 3 key factors related to Symmetric Encryption?	1- Choosing the right encryption algorithm 2- Securing the encryption key itself 3- Sharing the encryption key
24_BIGQUERY	What are the 3 types of clusters we may create for Dataproc?	1- Standard (1 master, N workers) 2- Single Node (1 master, 0 workers) 3- HA (3 masters, N workers)
03_GCE_MIG(Managed Instan	What Maximum Unavailable mean?	How many offline instance can we tolerate
04_GCE_LB(Cloud Load Balan	What is the critical thing to make sure of when configuring LB to health-check the MIG?	Add firewall rules at the VPC level to allow LB reach the MIG
20_RESOURCES_ORGANIZATIO	I want a centralized constraints to my org. resources, how do I manage?	Use service Organization Policy Service (OPS)
32_GCP_SERVICES_2	What is the org. responsible for events standersization, and what challenge is she trying to solve?	- https://cloudevents.io (CNCF) - Different publishers use different formats of events (consistency, standerdization by building common libraries and tooling, portability)

08_APP_ENGINE	Compare between Standard & Flexible App Engine in

SSH | Flexible yes |
31_ARCHITECT_RESPONSIBILIT	How Architect plans for HA? From Managed Services perspective	By using managed services like App Engine, Cloud functions, Cloud storage
05_GCE_LB(For Architects)	Give 4 points to ensure resiliency	- Run VM's behind global LB - Cloud Logging and install logging agents in VM's - Configure HC's - Disaster Recovery by making mutiple copies of images
28_RELEASE_MANAGEMENT	ROLLING is another deployment approach, explain it	We define a window size (ex. 5%), and we rollout gradually by this size everytime till the end.
14_CLOUD_STORAGE	How to make sure the retention policy is not changed	By Locking it. It is permanent action. The full amount of the storage for this period will be considered and the KMS key used will be undestructible
15_IAM	What role does a default created SA?	Editor
09_GKE	What is the command to run in Cloud shell to connect to GKE cluster?	gcloud container clusters get-credentials CLUSTER_NAME --region REGION --project PROJECT_ID
24_BIGQUERY	Name 6 formats can BQ import data from?	1- CSV 2- JSON 3- AVRO 4- Parquet 5- ORC 6- Datastore backups
02_GCE(Google Cloud Engine)	There are 4 things we may do to troubleshoot VM's start up failure, name them.	1- Check Quotas 2- Check if Boot disk is full 3- Check serial port output. (Add metadata serial-port-logging-enable=true to send its output to Cloud Logging) 4- Check if the disk has a valid filesystem (mount it as data disk to another VM and check)
26_CACHING	Name 4 usecases for using caching	1- User sessions 2- Infrequent changed data in db 3- Static content 4- Infrequent changing dynamic data
01_REGIONS_ZONES	Each region has a single Cluster	FALSE
16_DATABASES	What are the 2 practises to follow when exporting big amount of data?	1- flag offload (create a temporary replicas for the export) 2- Export/Import with small batches instead of big ones
20_RESOURCES_ORGANIZATIO	What are the 5 IAM Members/Identities?	1- Google Account (person) 2- Service Account 3- Google Group (of persons or SA's) 4- Google Workspace Domain 5- Cloud Identity Domain (Cloud Identiy is IDaaS)

14_CLOUD_STORAGE	What is the max size of object in a bucket?	5TB
27_DEVOPS_SDLC_AGILE	How cloud deployment manager works?	You create a Yaml file with all the configuration and feed it to the CDM
15_IAM	How can we allow a user a limited access to our objects?	We use the Signed Url. 1- Create a key from the SA that permits the access to the object 2- Create the Signed Url using: gsutil signurl -d DURATION KEY gs: //BUCKET/OBJECT_PATH
13_BLK_FILE_STORAGE	MIG can be only zonal	FALSE
11_CLOUD_RUN	Which open stand on top of it is built Cloud Run?	knative
26_CACHING	One major best practise in CDN is usage of Custom Cache Keys, tell how can this serve with Protocol or Host or query parameters?	When using custom keys we may disable protocol or host or query parameters. http//url/image.jpg is a cache miss if protocol is not disabled and the call made with https. The same for host when call with www or without. The same might happen when a url contains a query parameter like ? type=hello
31_ARCHITECT_RESPONSIBILIT	How Architect plans for HA? From GKE perspective	Multi master, regional clusters with pod and cluster autoscaling
14_CLOUD_STORAGE	What are the 4 different storage classes	1- Standard (frequently accessible data) 2- Nearline (data access less than once a month) 3- Coldline (data accessed less than once a quarter) 4- Archive (less than once a year)
25_DATA	For ad hoc analytics on data coming from stream, we better use:	BQ
33_GOOGLE_ARCHITECTURE_F	What is GCAF?	It is a Best Practises and Implementation recommendations to help design Google Cloud Deployment
13_BLK_FILE_STORAGE	Name 3 use cases you go for Filestore	1- File share 2- Media Workflows 3- Content Management
02_GCE(Google Cloud Engine)	What Compute Engine Metadata is for?	"Compute Engine metadata lets you specify key-value pairs that are available to all VM instances in the project." It is a way to manage the keys we use to authenticate to ssh to.
05_GCE_LB(For Architects)	What is the availability policy (2 options) in Live Migration?	- On Host Maintenace: Migrate instance or Terminate - Automatic restart: Restart VM if they are terminated due a non-user-initiated reasons

28_RELEASE_MANAGEMENT	When releasing with GKE, we might apply the 4 release approaches: RECREATE, ROOLING UPDATE, CANARY, BLUE GREEN, how to do that?	In the config file we set strategy to recreate or rollingupdate (default is rollingupdate). For BLUE GREEN, we simply create a new deployment For CANARY approach, we simply need a service mesh like Istio
05_GCE_LB(For Architects)	Name 2 limitations for the Sustained discount use	- Does not apply to certain VM's like E2 and A2 - Does not apply to VM's created by App Engine flexible and Dataflow
27_DEVOPS_SDLC_AGILE	From testing perspective, SRE has 3 recommended best practises, name them:	1- Penetration Testing (Ethical Hacking) by simulating attacks, and no need to inform google 2- Load Testing with focus on spiky traffic (JMeter, Load Runner..) 3- Resilience Testing, by dropping dow some components and networks
08_APP_ENGINE	Compare between Standard & Flexible App Engine in Local Disk	Standard can write to /tmp, Flexible yes but ephemeral
04_GCE_LB(Cloud Load Balanc	In internet communication, what are the 3 main communication layers in the 7 layers and which protocols has each?	L7: Application Layer. HTTP HTTPS SMTP L4: Transport layer. TCP TLS UDP L3: Network Layer. IP
31_ARCHITECT_RESPONSIBILIT	What are the 3 main parts of Incident management?	- Avoid Incident (by monitoring and alerting and best practises in programming like exponential retrial) - How to react to incident quickly (by monitoring and Game Days) - Post-mortem (How to prevent the incident to not repeat)
04_GCE_LB(Cloud Load Balanc	What are the 3 configuration steps to do while creating an LB?	- Backend - Front end - Paths & Rules
27_DEVOPS_SDLC_AGILE	Name the 2 main repositoreis in GCP	Cloud Sourec Repository (based on GitHub) Container Registry (for docker images)
15_IAM	What are the two types of access controls in Cloud Storage?	Uniform (at bucket level using IAM) Fine-grained (Use IAM and ACL)
11_CLOUD_RUN	Cloud Run service is regional only	TRUE
10_CLOUD_FUNCTIONS	What is best practise to use versioning in CF?	Use Cloud Endpoints or API Gateway
03_GCE_MIG(Managed Instan	What are teh 2 varities of MIG? What is the difference?	Sate(full/less) Go for statefull when you need to persist config. and state, like DB

28_RELEASE_MANAGEMENT	When updating MIG with ROLLING release, we use the command that consumes the new template and we define the values --max-surge and --max-unavailable. What those 2 values mean?	max-surge mean the max number of instances to be upated at a time. max-unavailable means the max number of instances that could go down at a time. Theses values might be number or percentage
32_GCP_SERVICES_2	Name 4 advantages of Event Driven Architecture	1- Loose coupling 2- Flexibe orchestration 3- Resiliency 4- Asynchronousity
14_CLOUD_STORAGE	What HA mean in multi-regional bucket?	If i store file it is replicated accross multiple regions and served to requester from nearest region to him
32_GCP_SERVICES_2	What is OpenTelemetry?	A collection of Standards and Tools to collect and export telemetry (Logs, Metrics and Traces) opentelemetry.io
16_DATABASES	What is the difference in HA between Cloud Spanner and Cloud SQL?	Spanner offer 5 9's and Sql provide 99.95%
16_DATABASES	Name the 2 GCP services for NoSQL?	Firestore (formerly Datastore) BigTable
09_GKE	What is the difference between standard and autopilot mode in GKE?	With Autopilot mode, GKE takes care of complete cluster management
15_IAM	How can an On-prem app use an SA to access a GCP resource (Long-Lived connection)?	1- Create the appropriate SA 2- Create a key (in the console of the SA) 3- Set an Env. vairable GOOGLE_APPLICATION_CREDENTIALS to reference the file of the key 4- Use Google Cloud Client Libraries
33_GOOGLE_ARCHITECTURE_I	What are the 3 strategies of Operational Excellence?	1- Automate, Build & Deploy 2- Monitor Business Objectives metrics 3- Conduct disaster recovery testing
08_APP_ENGINE	What is the difference in runtime support ?	Standard supports only Java, Python, PHP, Nodejs, Ruby and Go. Flexible supports any runtime (after creating the docker container for you)
13_BLK_FILE_STORAGE	We are able to increase size of PD even while it is attached to the VM	TRUE
10_CLOUD_FUNCTIONS	Name another diff. from traffic management perspective	CF gen2 allows traffic splitting
33_GOOGLE_ARCHITECTURE_I	What Operational Excellence is all about?	It is about running, managing & monitoring systems that deliver business value
19_OPERATIONS	Cloud Logging can read logs from VM's	FALSE (You need to install the Logging Agents)
08_APP_ENGINE	What is the drawback of Basic scaling option?	High latency, because it might go to zero instance when there is no load.

31_ARCHITECT_RESPONSIBILIT	As Architect, you should think of Scalablity, Security, so what are the 3 aspects of security?	1- Confidentiality (right people access the right info) -> IAM best practises and Data encryption 2- Integrity (Protect data from unauthorized change) -> IAM best practises and hash verification (of logs) and digital signatures 3- Availability (Data available whenever needed) -> Firewalls, Failover, Redundancy
01_REGIONS_ZONES	What is a Cluster?	Distinct physical infra. that is housed in a DC
05_GCE_LB(For Architects)	What the maximum time we may be able to run a preemtible VM?	24H
16_DATABASES	How can we increase Availability of DB?	By creating multiple Standby's (in different zones/regions as needed)
12_CLOUD_KMS	What are the 3 states of Data?	- Data at rest (ex. in disk) - Data in transit or in motion (data through API) - Data in use (ex. in RAM)
13_BLK_FILE_STORAGE	What is the protocol supported by Cloud Filestore	NFSv3
19_OPERATIONS	What do we need to be able to monitor multiple GCP projects?	Workspace (with Host Project)
16_DATABASES	What is a Hot Standby?	A Standby that is ready to pick up the load
02_GCE(Google Cloud Engine)	To move VM instances we may use the move command: gcloud compute instances move ... But this has 4 restrictions, name them	1- Instance is part of MIG 2- Instance is attached to a local SSD 3- Instance is in Terminated status 4- Moving accross regions
03_GCE_MIG(Managed Instanc	How MIG can be located?	Zonal & Regional
19_OPERATIONS	What are the 2 Services provided by GCP regarding the auditing and the security	1- Access Transparency Logs (Capture actions but provided only for Gold support level) 2- Cloud Audit Logs (this answers What, Who and Where)
31_ARCHITECT_RESPONSIBILIT	What is OWASP?	It is for Open Web Application Security Project. It publish yearly the top 10 attacks on the web applications
08_APP_ENGINE	What is the structure of App Engine?	Each Application in App Engine has multiple Services and each service has multiple Versions (an instance of the service)
13_BLK_FILE_STORAGE	How to make snapshots efficient?	By organizing PD by putting together similar data (OS data, Volatile data and Permanent data) so you might need to attache multiple disks
17_NOSQL	In Bigtable, multi-index is supported for performance	FALSE (based on rows or columns). Only on the row key

03_GCE_MIG(Managed Instanc	Does MaxSurge allow the increase of instances temporarily to exceed the max size of MIG?	TRUE
16_DATABASES	Tell the 3 levels of consistency	L1- Strong consistency: Synchronous replication to all replicas => Slowness L2- Eventual consistency: Asynchromous replication => ex. social media posts L3- Read-after-write consitency: Inserts are synchronous but updates aren't
22_DATAFLOW	Give the pipeline to batch files	Cloud storage -> Dataflow -> BigQuery/Bigtable/Datastore/...
17_NOSQL	Give 3 cases where indexes are inefficient	1- Write-heavy workloads 2- Low selectivity columns (columns with same value like gender) -- Low cardinality columns 3- Excessive or redundant indexes (composite redundant in tw single indx)
03_GCE_MIG(Managed Instanc	What Maximum Surge mean?	How many instance can we add at a time
17_NOSQL	Why Cloud Bigtable is not condidate for transactional operations?	It is single row transactional database
19_OPERATIONS	After reaching the Cloud Router service, what action do we need to route logs to different services?	Sinks
02_GCE(Google Cloud Engine)	Windows based machine are not key based authentication	TRUE. They are pwd based login
19_OPERATIONS	What is the best scenario to execute if I want to provide external auditor to see some logs?	Create a log sink in Cloud Logging to ingest data into a Storage Bucket and provide the auditors with Object Storage Viewer role to this bucket
08_APP_ENGINE	What are the 3 options you can split traffic by in app engine?	- IP Address - Cookie - Random
20_RESOURCES_ORGANIZATIO	What does Inheritance Policy is Transitive?	Higher Level policy is also applied at lower one
09_GKE	What is the usage of GKE Sandbox pool?	Let you run untrusted thrid-party code in a separate node pool
09_GKE	With GKE, I can attach PD and Local SSD to cluster's nodes	TRUE
06_GCLOUD	What is the gcloud command structure?	gcloud GROUP SUBGROUP ACTION
31_ARCHITECT_RESPONSIBILIT	Digital Signatures garantees 2 things, name them:	1- The Integrity (data is coming from the right sender) 2- The non-repudiation (sender can not claim that the signature is no authentic)
16_DATABASES	How HA config is set up?	Primary and Standby are create in two zones

15_IAM	What a policy is and what does it do?	A policy is a object that presents a set of Bindings. (A Bind is an assignement of a Role to a list of Members and might have Conditions like for a specific limited time)
13_BLK_FILE_STORAGE	From creation perspective, what is the difference between Image and Machine Image?	An Image is created from boot PD A Machine Image is created from a VM
16_DATABASES	What is the 3 facts of scalability: 1- How can we scale? 2- How to increase the write capability?	1- We scale by creating read replicas. 2- To scale the write capability: - Vertical scale the instance - Create multiple small instances as general approach
10_CLOUD_FUNCTIONS	What are the 3 scaling parameters you can configure in CF?	Max number of concurrent request per instance. The minimum and the maximum number of instances
16_DATABASES	How can we increase Durability of DB?	- Snapshots - Replicas - Transactions Logs - Standbys
18_NETWORKING	How firewall rules are prioritized?	They are given priority from 0 to 65534 with 0 is the highest
31_ARCHITECT_RESPONSIBILIT	How Architect plans for HA? From Cloud SQL perspective	- Use HA Configuration (regional): Cluster with Primary Instance and Standby Instance is created => Read Replicas will not be able to be promoted
20_RESOURCES_ORGANIZATIO	Name 4 best practises when dealing with IAM?	1- Principle of Least Privilege 2- Separation of Duty (when dealing with sensitive tasks) 3- Constant Monitoring (Reviewing Cloud Audit Logs and retain them in Cloud Sotrage) 4- Grouping
13_BLK_FILE_STORAGE	We are able to create an image from an attached PD to an instance	. We must stop the instance;TRUE. But recommended to stop the instance;FALSE
18_NETWORKING	How to set up a Shared VPC?	A Shared VPC uses the concept of Host Project (where the admin of the Shared VPC) and Service projects (assigned to the Shared VPC). Isolation between projects could be used through subnets. Separation of duties is achieved here and networking governance
13_BLK_FILE_STORAGE	What type best to use in Big Data use case?	Standard (HDD)
19_OPERATIONS	What are the 2 components of Cloud Profiler?	- Profiling agent (collects profiling information) - Profile interface
27_DEVOPS_SDLC_AGILE	DevOps is about gringing 3 main elements together, name them:	1- Communication 2- Feedback 3- Automation

21_PUB_SUB	What are the 2 steps to use Pub/Sub service?	1- Create a topic 2- Create subscriptions by clients
27_DEVOPS_SDLC_AGILE	Name 4 key principles of SRE	1- Manage by Service Level Object - SLO (like HA by 5 9's) 2- Minimize toil (by automation) 3- Move fast by reducing cost of failure (small frequent releases) 4- Share ownership with developers (developer is responsible of deployment)
05_GCE_LB(For Architects)	What is scalability?	It is the ability to adapt to changes in demand (users or data)
20_RESOURCES_ORGANIZATIO	A BQ data owner/editor/viewer is able to manage and see jobs	FALSE
27_DEVOPS_SDLC_AGILE	What Cloud Build is for?	To build deployable artifacts (jars and docker images)
23_HYBRID_CLOUD	HA VPN supports only Dynamic Routing and not Static Routing	TRUE
19_OPERATIONS	What are the 4 key features for Cloud Logging?	1- Logs Explorer (search, sort & analyze) 2- Logs Dashboard 3- Logs Metrics (Capture metrics from logs) 4- Logs Router (Route logs to destinations)
15_IAM	Give the two cases where we might grant users access to a created service account	1- Assign user to behave on behlf of SA (like deploying an app) 2- Assign user to admin the SA itself (add permissions ..)
11_CLOUD_RUN	What is the command line to run a Cloud Run service with a specific version suffix?	gcloud run SERVICE_NAME --image IMAGE_URL --revision-suffix VERSION
05_GCE_LB(For Architects)	What is Sustained use discounts?	It is an Automatic Discount you get when you use a VM more than a percentage of the month (like 25%). The more you use after this percentage the higher the discount will be
10_CLOUD_FUNCTIONS	Name a diff. of CF gen2 from CF gen1, from concurrency perspective	CF gen2 allows up to 1000 concurrent request (only one in 1st gen)
30_MIGRATION	In Migration Phase 3, we have 3 steps to folow:	1- Migrate Data (consider cost, offline vs online etc..) 2- Deploy applications 3- Prefer automation (a- config mgmt using ansible and similar, b- build using jenkins and similar, c- IaaC)
15_IAM	What are the 3 types of roles?	- Basic Roles - Predefined Roles (ex. Storage Object Admin) - Custom Roles (my own defined Roles)
08_APP_ENGINE	How to deploy a new verion without switching traffic to it?	--no-promote
22_DATAFLOW	Dataflow is serverless	TRUE

06_GCLOUD	What the gcloud command to see the configuration?	false|gcloud config;true|gcloud config list
28_RELEASE_MANAGEMENT	The BLUE GREEEN approach needs backward compatility	TRUE
11_CLOUD_RUN	What is Knative?	Fully manager serverless platform for containerized application
31_ARCHITECT_RESPONSIBILIT	Besides cost (in understading Business Requirements), Architect should be able to increase the pace of innovation, explain	- Adopt emerging processess like DevOps CI/CD, SRE - Adopt emerging architectures like Microservices
24_BIGQUERY	Running queries on big amount of data is very expensive, what is the best practise to use to minimize the code or at least be aware of (in 2 steps)?	1- Use UI console or bq command with --dry-run to estimate the amount of data to be scanned 2- Use the price calculator to estimate the cost
28_RELEASE_MANAGEMENT	Explain the BLUE GREEN approach	We create a replic env. for v1 and rollout v2 in the new env. we kill v1 env. rightafter
01_REGIONS_ZONES	What are the 4 main adavantages of having regions around the world?	- HA - Latency - Global footprint - Gov. regulations
20_RESOURCES_ORGANIZATIO	What is the best practises in creating projects having multiple apps and multiple departments and shared resources?	1- Create Folder per department 2- Create Folder(s) for shared resources 3- Create Project per application per environment (App1-Dev and App1-Prod)
22_DATAFLOW	Which Open source tool Dataflow is based on?	Apache Beam
31_ARCHITECT_RESPONSIBILIT	How Architect plans for HA? From Compute Engine perspective	- Live Migration - MIG with autoscaling and auto helth checks
06_GCLOUD	What is the gloud command to use when establishing ad gcloud session?	gcloud init
32_GCP_SERVICES_2	How can you use Service Directory with your Java application?	With its library
27_DEVOPS_SDLC_AGILE	Name the 4 main key metrics in SRE	1- Service Level Indicator (SLI): quantitative measure of an aspect of a service (ex. availability, latency, throughput..) 2- SLO = SLI + Target (like 4 9's Availability, Response time 99th percentile is 1 sec) 3- SLA = SLO + consequences (defined in contract) 4- Error budget (100% - SLO) this serve to mesure the development velocity
32_GCP_SERVICES_2	What is the difference between IAM and Identity Platform?	IAM is for the organization's users and partners. Identiy Platform is CIAM (customer identiy and access platform)

03_GCE_MIG(Managed Instan	What are the two types of deployments MIG give?	Rolling Update & Canary
02_GCE(Google Cloud Engine)	How the Applications in VM could access Google Cloud APIs?	Using SA
08_APP_ENGINE	What command to run to deploy a new version of an app engine app?	gcloud app deploy --version NEWVERSION
31_ARCHITECT_RESPONSIBILIT	How Architect plans for HA? From Hybrid Network Connectivity perspective	- Speed and Availability: Dedicated interconnect -> Partner interconnect -> VPN - VPN as backup
32_GCP_SERVICES_2	Anthos provides 3 main services when dealing with multiple clusters, name them?	1- Multi-cluster management (consistent k8s, dev & ops) 2- Centralized config. management (github repo) when you logically group clusters and push on commits 3- Service mesh (based on Istio) that provides sidecar to manage centralized auth., logs, traces and A/B testing and Canary rollouts
27_DEVOPS_SDLC_AGILE	What is the 2 ways to develop software in SDLC?	Waterfall and Agile
31_ARCHITECT_RESPONSIBILIT	BCP is about 2 main things, what are they?	1- Disaster Recovery Plan (Restore Critical IT applications and Systems) 2- Business Recovery (Restore Critical Business Processes)
04_GCE_LB(Cloud Load Balanc	What are the 2 types of LB and give example?	- HTTPS LB for web application, this for http and https protocols. - Network LB for gaming application and more, this for UDP, TCP
09_GKE	What is the main difference between Deployment & ReplicaSet? Having the fact the ReplicaSet is child of Deployment	Deployment ensure that a microservice release is working properly (shift from one release to another) but replicaset ensures that the proper number of pods is running for that microservice
32_GCP_SERVICES_2	What is the service that plays the role of Service Discovery?	Service Directory
16_DATABASES	OLAP and OLTP use both similar data structure (Table), what is the main difference?	OLTP are row-based storage OLAP are columnar-based storage
08_APP_ENGINE	What is the command to split traffic between v2 and v3 50 50?	gcloud app services set-traffic --splits=v2=.5,v3=.5
05_GCE_LB(For Architects)	What is the key diff. between preemtible VM's and Spot VM's?	Spot VM does not have maximum runtime
16_DATABASES	Name 5 factors that helps use the right database?	1- Fixed shcema (or shcemaless) 2- Trasaction Property (Atomicity and consistency) 3- Latency (s's, ms's, micro's) 4- Transactions number 5- Data Size
20_RESOURCES_ORGANIZATIO	BigQuery roles turn around to main pillars, what are they?	Data and Jobs

28_RELEASE_MANAGEMENT	We have another carollerie of ROLLING approach, name it and give the difference from ROLLING approach	It is ROLLING WITH BATCH. We add extra instances (based on window size) and we launch the rolling after. We need to make sure that the number of instances serving users remains the same
01_REGIONS_ZONES	Is it possible to have deployed the application in a different zone from its db? Why?	Yes. Because zones are linked with Low Latency links
16_DATABASES	In the context of Relational Databases, what OLTP and OLAP stand for?	OLTP: OnLine Transactional Processing OLAP: OnLine Analytics Processing
25_DATA	What is the best definition of Datalake?	It's a single platform with combination of solutions for data storage, data management and data analytics
26_CACHING	What is the main difference between Redis and Memcached	Memcached does not provide persistence
16_DATABASES	What is the OLTP option for global and 5 9's HA and support to PB's with horizontal scaling?	Cloud Spanner
30_MIGRATION	In Migration Phase 2, we undergo 3 steps:	1- Design resource organization hierarchy, configure IAM and design topology and connectivity 2- Plan for security 3- Plan for migration team
15_IAM	What is the recommended format of an SA?	An email. Ex. <id>@gcp-training-2-444405.iam.gserviceaccount.com
23_HYBRID_CLOUD	What is the main GCP service neede to establish a HA VPN?	Cloud HA VPN Gateway (it is regional)
26_CACHING	Which service to use when we serve users from all over the world? How does it work?	It is CDN (Google's global edge network). It integrates with External HTTP(S) LB. LB use proxies called Google Front Ends (GFE). LB sits before the backends
17_NOSQL	When we use HDD over SSD in CBT?	When we have huge amount of non latency-sensitive data
31_ARCHITECT_RESPONSIBILIT	How Architect plans for HA? From Cloud Bigtable perspective	Place clusters in different zones/regions
23_HYBRID_CLOUD	What are the 2 types of Cloud Interconnect?	1- Dedidcate Interconnect (10gbps or 100gbps) 2- Partner Interconnect (lower bandwidth)
17_NOSQL	Cloud Bigtable is serveless	FALSE (you just provision it) (you create instance based on SSD or HDD)

02_GCE(Google Cloud Engine)	How we run a shutdown script on a VM (2 ways)?	1- By adding a metadata with key name : shutdown-script and value: THE_SCRIPT_NAME 2- By adding a metadata with key name: shutdown-script-url and value GS: //BUCKET/FILE
04_GCE_LB(Cloud Load Balanc	What is the difference between Standard Tier and Premium in Networking service of GCP?	In Standard Tier you have only backends in the same region as LB Backend service(No Global routing).
10_CLOUD_FUNCTIONS	It is better to use single service account for all CF's?	FALSE
13_BLK_FILE_STORAGE	What are the two main storages?	- Block Storage (like Hard Disk) - File Storage (used to share files)
14_CLOUD_STORAGE	What is the durability of objects in buckets?	11 9's
20_RESOURCES_ORGANIZATIO	What is the role needed to be able to manage OPS?	Org. Policy Admin
13_BLK_FILE_STORAGE	Snapshots can be shared accross projects	TRUE
20_RESOURCES_ORGANIZATIO	What are the 2 kinds of exports in Billing?	File and BigQuery
12_CLOUD_KMS	What are the 2 protection levels when we create a cryptographic key?	1- HSM (Hardware Security Module) where keys are managed in hardware-based secure env. 2- Software where keys are managed in software-based env. (cheaper)
30_MIGRATION	What are the 4 phases to do to migrate to CGP?	1- Assess the workload to be migrated 2- Plan the foundation 3- Deploy the workload 4- Optimize the environment
04_GCE_LB(Cloud Load Balanc	What is the relation between TCP and TLS?	TLS is a secure form of TCP
16_DATABASES	What are the differences between backups and exports from : 1- Heaviness perspective 2- Retention 3- Flexibility	1- Backups are lightweiht and provide point-in-time recovery but Exports take longer 2- Backups are delete with the instance but not exports 3- Backups are the instance level, but exports can work on table level
10_CLOUD_FUNCTIONS	CF gen2 comes with two main problem solutions in comparaison to typical serverless function?	- Cold Start - Concurrent requests per single CF
16_DATABASES	Name 3 main advantages of OLAP	Distribution (Single Table could be distributed on multiple Nodes). High Comression (Store PB's of data effitiently), Efficiency. Complex queries could be executed fast

19_OPERATIONS	How logs flow from different sources?	Logs come from 3 main different sources (On-Premises Logs, GCP services logs, Third-party cloud logs) to the interface (ex. API) that received after by Logs Router which check against different rules to route based upon (what to ingest or discard, where to route)
16_DATABASES	What is a standby DB?	It is a second replic of the master database that sits in another DC with synchronous replication
02_GCE(Google Cloud Engine)	What the service VM Manager is for?	Manage the operating systems for large VM fleets. Free for up to 100 VMs. Not enabled by default
16_DATABASES	What does it mean that HA set up can not be used as read replic?	HA means you create a standby that will be the main if the main goes down. Nevertheless, the standby can be connected to whatsover while the main is running
13_BLK_FILE_STORAGE	What is the name of the file storage service in GCP (NFS)?	Cloud Filestore
21_PUB_SUB	What are the 4 steps to send/receive msg with Pub/Sub?	1- Publisher sends the msg 2- The msg individually delivered to each and every subscription either by pull or push 3- Subscriber sends an acknowledgment of processing the msg 4- Msg is deleted from the queue
28_RELEASE_MANAGEMENT	What is the other CANARY approach usage and what for	A/B Testing. In that case we name it like mostly when we release a new feature and check if users like it or not
14_CLOUD_STORAGE	What dual-region means on CS?	Combined two regions offered by GCP coming with HA and LL
06_GCLOUD	How to filter multiple?	--filter "zone:(asia-southeast-b asia-southeast-c)"
13_BLK_FILE_STORAGE	When creating a VM, a Boot Disk is automatically attached to ti, what is its type?	PD
15_IAM	If access given my IAM but not by ACL, the user still be able to access.	TRUE (IAM or ACL); (IAM and ACL)
26_CACHING	At which level we set a CND configuration?	At the step of creation of a backend service in LB (it is a checkbox)
04_GCE_LB(Cloud Load Balanc	Explain resiliency in LB	LB has health check that permits distirbuting traffic to only healthy instances
32_GCP_SERVICES_2	Name 3 event providers for Eventarc	1- Cloud Storage 2- Cloud Audits 3- Pub Sub
10_CLOUD_FUNCTIONS	What is the maximum timeout for a CF?	9 Minutes for 1st gen and 60 minutes for 2nd gen
15_IAM	What a role is?	Set of permissions (to perform a set of actions on a specific resource)

02_GCE(Google Cloud Engine)	Is Instance template mutable?	FALSE
02_GCE(Google Cloud Engine)	Tell why shutdown script is best-effor basis?	There are cases where it might not run: . If we use hard reset . If it passess the grace period (30 seconds) of the preemtibles VM's
02_GCE(Google Cloud Engine)	What are the roles needed to be able to login with OS Login?	- roles/compute.osLogin - roles/compute.osAdminLogin
17_NOSQL	Firestore is multi-regional?	TRUE
18_NETWORKING	When creating a custom VPC, there Firewall rules to pick. If I don't pick any rule, there are still 2 by default, which are they?	false|Allow All Ingress, Allow All Egress;false|Deny All Ingress, Deny All Egress;true|Deny All Ingress, Allow All Egress;false|Allow All Ingress, Deny All Egress
16_DATABASES	What is a Warm Standby?	It is a standby with minimum infrastructure
24_BIGQUERY	What is the structure of storing data in BQ?	BQ -> Dataset -> Tables
24_BIGQUERY	We may configure expiration at the table level in BQ	TRUE
09_GKE	What is the 3 main roles of an Ingress in k8s?	- Load Balancing - SSL Termincation - Control traffic by defining rules on the ingress resource
01_REGIONS_ZONES	How, at least, have a region a number of zones?	3
02_GCE(Google Cloud Engine)	What are the 3 options we may use to ssh into VM?	1- SSH Button from the console 2- Gcloud. gcloud compute ssh (In that case a username and ssh key are created and will be used for further interaction) 3- Use customized ssh keys (in that case either Metadata managed or OS Login with gcloud compute os-login ssh-keys or use API)
20_RESOURCES_ORGANIZATIO	What is the hirarchy of GCP?	Org -> Folder -> Project -> Resources
17_NOSQL	In Bigtable, to design the row key, I wish to use timestamp and query based on recent data, how to I design the row key?	Add the (Long.MAX_Value - timestamp) at the end to avoid starting the keys with timestamp
32_GCP_SERVICES_2	A Full managed service, enterprise-grade, that integrated with Pub/Sub, App Engine, and any HTTP Endpoint, can be used in case of make some messages go for VM's at specific intervals	Cloud Scheduler
18_NETWORKING	When creating a Firewall rule for our network, each rule has mainly 7 parameters to configure, what are they?	1- Target (for Ingress and Egress) 2- Source if Ingress or Destination if Egress 3- Priority 4- Action (Allow or Deny) 5- Protocol 6- Port 7- Enforcement status (active or not)

13_BLK_FILE_STORAGE	What are the 2 types of BS in GCP?	1- Persistent Disk: Network Block Storage, can be zonal (replicated data in zingle zone) or regional. 2- Local SSD: Local BS attached to the VM
24_BIGQUERY	Name 6 best practises that come with BQ usage	1- Estimate queries before run 2- Use Partitioning and clustering 3- Avoid streaming inserts when possible 4- Expire data 5- Consider long-term storage 6- Do no use for simple queries (it is designed for complex ones)
04_GCE_LB(Cloud Load Balanc	What are the 2 types of deployment of LB?	- Global (multi-region) for global traffic using anycast IP. - Regional for a single region
18_NETWORKING	What the 2 main things that happen in VPC auto mode creation?	1- Default VPC is created automatically 2- VPC comes with subnet in each region
18_NETWORKING	Subnet is a global resource	FALSE (Regional); (Zonal)
20_RESOURCES_ORGANIZATIO	If policy is applied at higher level, I am able to deny it at a lower level	FALSE
17_NOSQL	What are indexes i 2 words? Why are they efficient?	Index is Data Structure that stores pointer to row. It is efficient because it uses B-Tree structures (some other are useful also). RDMS queries parts of the table instead of the entirety
31_ARCHITECT_RESPONSIBILIT	From Security, protection from DDoS is crutial , GCP offers 3 main service/features to protect you from it, name them:	1- Anti-spoofing at the level of the private networks 2- Isolation between virtual networks 3- GFE (Google Front Ends) that protect you at the level of Layer 4 and below
31_ARCHITECT_RESPONSIBILIT	How Architect plans for HA? From Geographical Distribution:	Go for Global -> Multi-regional -> Regional -> Zonal
31_ARCHITECT_RESPONSIBILIT	Still with understanding business requirements, what the architect should be able to do at this areas: 1- Mean time recovery 2- Regulations 3- Visibility on applications 4- Intelligence from data	1- Reduce it 2- Improve the compliance 3- Add metrics to improve the visibility on the applications 4- Add more intelligence from the available data
21_PUB_SUB	How can we maintain messages order in Pub/Sub?	By using the option --enable-message-ordering in the subscription
20_RESOURCES_ORGANIZATIO	How to define the effective policy for a resource?	It is the UNION of the policy on that resource and its parents
24_BIGQUERY	Name a good thing of BQ, for storage / compute perspective	It separates the storage from the compute
13_BLK_FILE_STORAGE	Name 4 elements that come with a Machine Image	1- Configuration 2- Metadata 3- Permissions 4- Data from one or more disks

01_REGIONS_ZONES	What are the main two reasons of having regions and zones?	- HA by having multiple Zones (DC's) in single region. - Low Latency by serving users in multiple regions
04_GCE_LB(Cloud Load Balanc	What TLS/SSL termination?	It is the fact that communication between client and LB is https but the communication between LB and backend services will be in simple http since it is inside gcp private network.
04_GCE_LB(Cloud Load Balanc	Explain HA in LB?	It can distribute traffic to different regions and/or zones
04_GCE_LB(Cloud Load Balanc	What is the main difference between UDP and TCP?	TCP gives importance to reliability over performance
30_MIGRATION	Name the 6 possible approaches to follow in migration	1- Rehosting = lift and shift 2- Replatforming (ex. containerization) 3- Repurchasing (ex. move to new db) 4- Refactoring (ex. move to serveless) 5- Retiring 6- Retaining (stay on-prem)
12_CLOUD_KMS	What are the 3 types of key management in KMS?	1- Google managed key 2- Customer managed key (managed by customer in KMS) 3- Customer supplied key (on-premise keys)
04_GCE_LB(Cloud Load Balanc	What is the difference between Proxy LB and Passthrough LB?	Proxy LB terminates connection with client but the Passthrough LB passes it as it is
33_GOOGLE_ARCHITECTURE_F	What are the 4 golden health to help monitor your system health?	1- Latency (how fast you respond to your users) 2- Traffic (how does the load on your system look like) 3- Errors 4- Saturation (utilization levels of your resources)
15_IAM	Is an SA and identity or a resource?	It is both. You can attach roles with SA. And you can let other memebers access an SA granting them a role on it
17_NOSQL	Firestore creates indexes for every field	TRUE
13_BLK_FILE_STORAGE	PD snapshots can be only regional and not multi-regional	FALSE
18_NETWORKING	What are the 2 default implied rule?	Allow all Egress and Deny all Ingress (come with priority 65534)
14_CLOUD_STORAGE	What are the 3 possible location type for CS?	- Regional - Dual-regional - Multi-Regional (not low latency)
31_ARCHITECT_RESPONSIBILIT	As a 2nd must-know by Architect, is ability to define Technical Requirements, name its 2 parts:	1- Functional Requirements (like usage of containerizations, usage of long time archival...) 2- Non-Functional Requirements (like Availability, Durability, Scalability)

26_CACHING	How the request flows in case of a CDN?	The request comes to the LB, the LB checks which backend is to query and in case this backend is configured with CDN, LB returned the cached data or hit the server and cache the data if there a cache miss (with TTL)
09_GKE	What is the OS used by GKE?	Container-Optimized OS, baked by Google
13_BLK_FILE_STORAGE	Machine Image is a differential backup	TRUE
16_DATABASES	What is the main challenge we face with Standbys and Replica?	Consistency
05_GCE_LB(For Architects)	From security perspective, what are the main 4 points to apply?	- Use Firewall Rules (control of ingress and egress traffic) - Use internal IP's whenever possible - Use Sole-tenant nodes when regulatory needs - Use hardened custom images
24_BIGQUERY	Why we should not use streaming with BQ as much as we can?	1- It is very expensive 2- Quotas (we better use InsertId to improve the quotas and apply de-duplication) 3- If millions of records per seconds, better to yse BT
02_GCE(Google Cloud Engine)	How to create a VM in sole-tenant group?	While creating the sole-tenant group we set an affinity label. When creating the VM we go under management menu and pick the sole-tenant submenu where we assign the lable
08_APP_ENGINE	What are the 2 types of App Engine? What is the main difference?	Standard (run language specific sandbox) & Flexible (run container)
32_GCP_SERVICES_2	Name 3 Event destination for Eventarc	1- Cloud Function 2- Cloud Run 3- GKE
02_GCE(Google Cloud Engine)	What is difference between Label & Tag?	Labels for teams and environments. Tags for cost and firewall rules
24_BIGQUERY	What are the 4 ways to import data to BQ?	1- Batch (Free) 2- Streeming (Expensive) 3- Federation (Federate querying to external sources like Cloud Storage) 4- BQ Data Transfer Servcie (Google SaaS or external sources like S3, Teradata)
23_HYBRID_CLOUD	What is Cloud Interconnect?	It is a private HA High speed low latency private connection between GC to on-premise
19_OPERATIONS	Some aspects to monitor in VM can not be provided my GCP Cloud Monitoring, how to deal with that?	Install Monitoring Agent that collects even processess metrics
10_CLOUD_FUNCTIONS	What are the 3 parameters you pay based on in CF?	- Number of invocations - Compute time of invocation - Memory and CPU provisoined

16_DATABASES	What is the recommeded GCP service for OLTP? What are the 3 supported RDMS?	- Cloud SQL - Postgres, MySQL, SQL Server (regional for few TB's)
16_DATABASES	What are the 2 mesures that we use to mesure how quickly we can recover from a failure?	RPO (Recovery Point Objective) => max. acceptable period of loosing data. RTO (Recovery Time Objective) => max. acceptable downtime
05_GCE_LB(For Architects)	From performance perspective, what are the 3 points to take into consideration while creating VM?	- Pick the right machine family - Use GPU (for math and graphic operations) and TPU (for matrix operations) - Prefer hardened custom images (accelerate startup when software installed)
20_RESOURCES_ORGANIZATIO	What is called the service that manages users, applications and devices in your org?	Identity Provider
05_GCE_LB(For Architects)	In which VM's is Live Migration supported and not?	- Supported in VM with Local SSD's - Not supported in Preemtible VM's and in GPU instances
03_GCE_MIG(Managed Instanc	What canary testing mean in updating MIG?	When we update the MIG, we might add a new template for Canary testing (updating only small number of instances first). Then rolling update for the rest
20_RESOURCES_ORGANIZATIO	What is the service that allows us to configure external identity providers?	Identity Provider
23_HYBRID_CLOUD	What is the main GCP service needed to establish a classic VPN?	A GCE VPN Gateway
03_GCE_MIG(Managed Instanc	What are the way of updating MIG?	Rolling Update (with possiblity of Canary testing) and Restart/Replace
05_GCE_LB(For Architects)	What is the latest version of preemtible VM's?	Spot VMs
02_GCE(Google Cloud Engine)	When creating a VM, by default all network traffic from outside a network is blocked	TRUE
04_GCE_LB(Cloud Load Balanc	What is the major difference between External Http(s) LB and External Network UDP/TCP LB?	The firs is Proxy and the second is Pass-through
11_CLOUD_RUN	What is service in cloud run?	Service is the cloud run application deployed, it contains revisions
09_GKE	The previous command does 2 successive things, what are they?	First: Fetching cluster endpoint and auth data Second: kubeconfig entry generated for CLUSTER_NAME

27_DEVOPS_SDLC_AGILE	CI/CD has 3 more recommendation to follow regarding testing/checkings practises	1- Static Cod Analysis (with Sonar and Lint and Veracode for security static analysis) 2- Runtime checks (check vulnerabilities checks like for web applications) 3- Run Unit Tests, Integration Tests, System tests (with other systems)
27_DEVOPS_SDLC_AGILE	In agile what are the 2 ways to develop software?	Spiral(iterations) or Scrum (sprints)
14_CLOUD_STORAGE	Name 3 advantages of STS	1- Repeated chedulability 2- Incremental transfer 3- Reliability and fault tolerance (continues from where it left off in case of errors)
13_BLK_FILE_STORAGE	Can we attach multiple servers to multiple BS?	Multiple servers can access read only to single BS. Single Server can be attached to multiple BS
14_CLOUD_STORAGE	How can we define if a file is to be displayed inline or downloadable?	Using Content-Disposition Metadata
03_GCE_MIG(Managed Instan(	What is cool-down period?	It is the period to wait before looking into autoscaling metrics
10_CLOUD_FUNCTIONS	Why it is recommeded to configure max number of instances in CF?	To avoid abnormally high request levels
14_CLOUD_STORAGE	Give 2 ways we can use to transfer data to CS?	1- Use gsutil or CS APIs (for data less than 1TB) 2- Use STS (Storage Transfer Service) for data bigger than 1TB.
27_DEVOPS_SDLC_AGILE	What does SRE team?	Takes care of every aspect of the application
03_GCE_MIG(Managed Instan(	In the context of Autohealing, what is important to consider ?	Initial Delay
18_NETWORKING	How do we assign Firewall rules to VM's?	Using tags. In the VM, configuration we assign/create Network tags. If allow http(s) is ticked, you will find Network tags are created (names are http-server, https-server)
11_CLOUD_RUN	What is the command line to update traffic in multiple revisions in Cloud Run?	gcloud run services update-traffic SERVICE_NAME --to-revisions=VERSION1=10, VERSION2=90
30_MIGRATION	What we do in Migration phase 4?	Enable logging, use managed services, autoscale
09_GKE	GKE requires all cluster's nodes to be identical	FALSE
04_GCE_LB(Cloud Load Balanc	What is AnyCast IP?	Anycast IP is a network addressing and routing method where the same IP address is assigned to multiple servers or endpoints across different geographical locations.

13_BLK_FILE_STORAGE	What are the 3 types of PD?	1- Balanced 2- Standard 3- SSD
18_NETWORKING	Firewall rules are stateful, what does that mean?	If Ingress is allowed, automatically Egress is
24_BIGQUERY	How to do we pay for BQ?	For the data scanned
15_IAM	What are the 3 basic roles?	Viewer Editor Owner (Editor + Roles mgmt + Billing)
06_GCLOUD	Cloud shell come baked with a VM, what is the storage comes with it? Does it lose you data between sessions?	5GB. No, it keeps you #HOME directory for 120 days of inactivity
28_RELEASE_MANAGEMENT	Talking about releasing in App Engine, what these options mean? 1) --no-promote 2) --splits v2=1	The first one is like BLUE GREEN deployment, we deploy but no release (no traffic to be consumed). The second one is to send traffic to complete V2
32_GCP_SERVICES_2	Which service I can use to run GCP service locally?	Cloud Emulator
08_APP_ENGINE	Compare between Standard & Flexible App Engine in Instance StartUp	Standard in seconds but Flexible in minutes
24_BIGQUERY	Name the 4 ways we can use to access BQ and run queries	1- Cloud Console 2- bq command line 3- BQ REST API 4- HBase API libraries
27_DEVOPS_SDLC_AGILE	What Spinnaker is for?	For multi-cloud continuous delivery, support multiple deployment strategies with different service like App Engine and GKE
14_CLOUD_STORAGE	Name the 2 cases when we recommend going for Transfer Appliance?	1- Data size is bigger the 20 TB 2- Or you online transfer will need more than 1 week
14_CLOUD_STORAGE	In case of Customer-supplied key in KMS, how the access/send of a file file1 is taking place through API (server side encryption)?	You use the local encryption file and send it with the API call (in headers) to be able to retreive the file
23_HYBRID_CLOUD	What are the 3 characteristics of Cloud VPN?	1- Traffic over internet 2- Implemented using IPsec Tunnel 3- Uses Internet key Exchange protocol
17_NOSQL	What is the structure of db in Firestore?	Collection > Document
09_GKE	Name 5 advantages of k8s	- LB - Auto scaling - Service Discovery - Selh healing - Zero down time deployments

27_DEVOPS_SDLC_AGILE	In SRE best practices, to handle the excess load, we have 2 possible ways, name them:	1- Load shedding, by setting API calls limits (different SLA for different customers) or dropping some of streamed data in case of streaming 2- Reduce the QoS (by returning some hardcoded data)
16_DATABASES	What is the service that we could use to migrate from other sources?	DMS (Database Migration Service)
13_BLK_FILE_STORAGE	What are the 2 usages of BS?	1- DAS (Direct-attached storage), like hard disk. 2- SAN(Storage Area Network), high speed network connecting a pool of storage devices.
32_GCP_SERVICES_2	Does Service Directory support other environment like on-prem or other cloud?	True
13_BLK_FILE_STORAGE	The balanced type is with HDD underlying storage	FALSE
16_DATABASES	What is Point-in-time recovery?	The ability to recover at a specific point in time (needs Enable Binary Logging)
31_ARCHITECT_RESPONSIBILIT	How Architect plans for HA? From Network perspective	Prefer Premium Network Tier
20_RESOURCES_ORGANIZATIO	Explain how could we execute Separation of duty in App Engine?	The service has two separate roles: 1- App Engine Deployer that can deploy but not shift traffice 2- App Engine Service Admin can not deploy but can shift traffic
08_APP_ENGINE	Compare between Standard & Flexible App Engine in Scaling	Flexible does not support Basic scaling, and can not scale to zero
13_BLK_FILE_STORAGE	I can attach a zonal PD to a VM from different zone	FALSE
31_ARCHITECT_RESPONSIBILIT	How Architect plans for HA? From Persistent Disks perspective	- Live resizing - Usage of Regional PD's
32_GCP_SERVICES_2	What are the 3 pillars of Observability	1- Logs 2-Metrics 3-Traces
14_CLOUD_STORAGE	What service to use in case I want to use my GCS as regular file system	Cloud Storage Fuse
02_GCE(Google Cloud Engine)	What are the 5 sources I can create an image from?	1- Disk (attached to vm) 2- Snapshot 3- Image 4- Cloud Storage File 5- Virtual Disk
16_DATABASES	What is the recommended way to connect you Cloud SQl from you applications?	Use Cloud Sql Proxy
11_CLOUD_RUN	Name 4 services Cloud Run integrates with in GCP?	1- Cloud Code 2- Cloud Build 3- Cloud Monitoring 4- Cloud Logging

07_SERVICES	Name three varities of PaaS	- CaaS - FaaS - Amazon RDS
14_CLOUD_STORAGE	Object can be having different storage classes from their buckets?	TRUE
02_GCE(Google Cloud Engine)	What the 2nd option to login to ssh into VM's?	OS Login. This is recommended when we are dealing with many users and we have a big fleet of VM's. In that approach, linux account is automatically linked to your google account
19_OPERATIONS	What Cloud Profile is for?	Is to collect bottlenecks in production system by continuously gathering CPU and memory usages from production code
17_NOSQL	Which open source tools is Bigtable compatible with?	HBase
04_GCE_LB(Cloud Load Balanc	Can an LB distribute traffice accross regions?	TRUE
08_APP_ENGINE	What are the different scaling options in App Engine?	- Manual - Basic, when you have ad hoc traffic - Automatic
19_OPERATIONS	What are the 2 possible options to ingest logs from On-premise?	1- (Recommended) Use BindPlane tool from Blue Medora. 2- Use Cloud Logging API
27_DEVOPS_SDLC_AGILE	In DevOps, what the 2 main part of IaaC?	1- Infrustructure Provisioning (with Terraform or Google Cloud Deployment Manager) 2- Configuration Management (Chef, Puppet, Ansilble... To install software and tools in the provisioned resoruces)
13_BLK_FILE_STORAGE	PD snapshots are incremental, what does this mean?	Every snapshot contains only data that is not present in previous ones. And when deleted only the data that is not needed by other snapshots is been removed
28_RELEASE_MANAGEMENT	Explain CANARY approach	It is 2 steps approach. Step 1: Rollout only subset of instances from V2 (percentage for testing only) Step 2: Rollout the rest if testing is successfull
33_GOOGLE_ARCHITECTURE_	GCAF has 4 principles, name them.	1- Operational Excellence 2- Security, Privacy and Compliance 3- Reliability 4- Performance & Cost Optimization
28_RELEASE_MANAGEMENT	We may also apply the BLUE GREEN approach to MIG, how?	We simply create a new MIG and update LB backend target
31_ARCHITECT_RESPONSIBILIT	What does Cloud Armor do mainly (2 things)?	1- Protects from DDoS 2- Protect from OWASP top 10 attacks It integrates well with LB

20_RESOURCES_ORGANIZATIO	If I want to use AD as Idp provider, what do I need mainly 2 things?	1- SSO: Active Directory Federation Service (ADFS) 2- Google Cloud Idenity Sync: To sync between Google Cloud Identiy and AD users
24_BIGQUERY	What Dataproc is? What deos it implement as open source tools	Dataproc is Data Analysis Platform that run complex jobs related to ML and AI. It is a managed Spark and Hadoop service
16_DATABASES	Name 4 use cases for memory DB	1- Cache 2- Session mgmt 3- Game board 4- Geospatial apps
08_APP_ENGINE	Can we create App Engine in multiple-regions?	FALSE