Assignment - 2

Section - A

1) Runtime cloud provides the execution and runtime environment to the virtual machines.

2) To maximize the value of a multi-cloud environment, it's important to mitigate common challenges that often arise with multi-cloud integration.

3) Cloud interoperability is the ability of applications and services developed on one platform to be used on another platform.

4) Identity and Access Management (IAM) lets administrators authorize who can take action on specific resources, giving you full control and visibility to manage google cloud resources centrally.

5) Amazon simple storage service (Amazon S3) is an object storage service that offers industry leading scalability, data availability security and performance.

Section - B

1) The business case should calculate the costs of migrating to the cloud - which includes

the cost of moving system over as well as the cost of running services in the cloud after migration and then compare them to the costs of keeping system in house.

cloud Infrastructure is the vital hardware and software that underpins your cloud computing processes. Than enterprise, it's the servers, networking equipment, virtualization software, and data storage that supports the delivery of your cloud solutions.

2) The 3 key cloud Infrastructure concerns
(i) The costs of the cloud: It's estimated that one-third of cloud spending is wasted. This can be due to several challenges from lack of visibility of your entire Iaas, Paas, or Saas environments to inefficient-pricing models. Additionaly, the COVID-19 pandemic has accelerated uptake of the cloud, with most businesses using more cloud services than planned.

(ii) Multi-cloud challenges - There's no doubt that the past year has impacted cloud complexity 93% of enterprise organizations now have a multi-

cloud environment and multi-cloud strategy. for example. And the next year will see businessos looking for better ways to manage their complex cloud environment.

3) Benefits of cloud computing Architecture:

→ Makes the overall cloud computing system simpler.

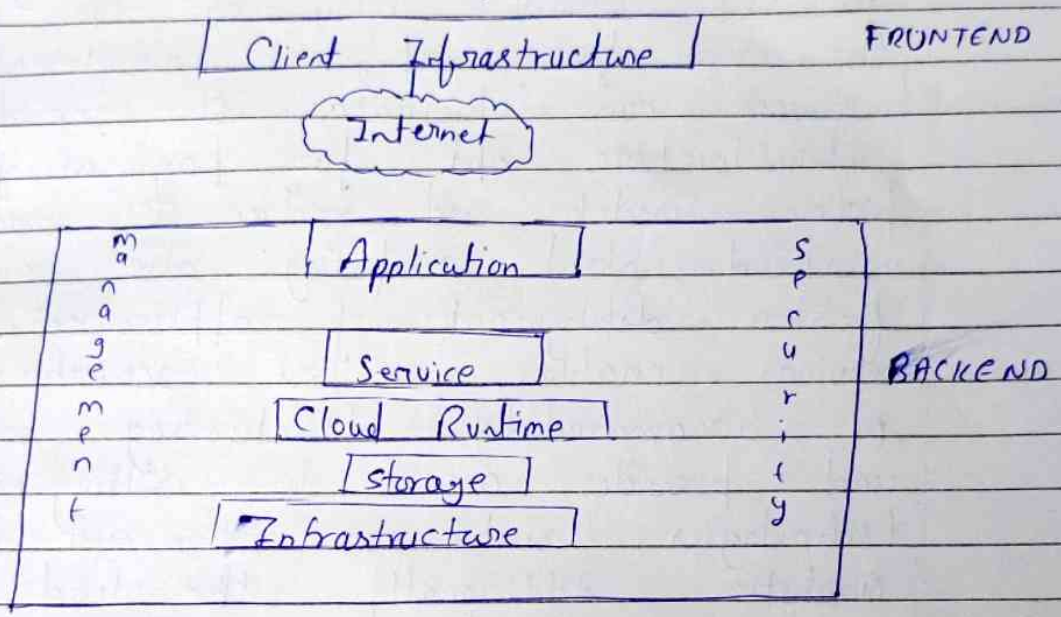
- Improves data processing requirements.
- Helps in providing high security
- Make it more modularized.
- Results better disaster recovery.
- Gives good user accessibility
- Reduces IT operating costs.

Section - C

1) Cloud computing Architecture:
The cloud architecture is divided into 2 parts i.e.

(i) Fronted
(ii) Backend

The below figure represents an internal architectural view of cloud computing.



Frontend of the cloud Infrastructure refers to the client side of cloud computing system means it contains all the user interface and applications which are used by the client to access the cloud computing services resource. Backend

Backend refers to the cloud itself which is used by the service provider. It contains the resources as well as manages the resources and provides security machanisms along with this.

2. What is the business case in cloud computing.

The business case for loud computing revolves around its ability to drive efficiency, innovation and scalability while reducing costs By migrating to the cloud businesses can eliminate the need for upfront investments in hardware can eliminate the need for infrastructure opt for pay-as you-go pricing models and reduce IT management overhead cloud computing also facilitates faster deployment of application and services enables semless scalability to accommodate fluctuating workloads and provides access to cutting-edge technologies such as AI and data analytics Additionally the cloud enhance collaboration and accessibility allowing teams to works from anywhere with an internet connection. Overall, cloud computing offers a compelling value proposition for business looking to stay competitive in today's fast-paced digital landscape.

3. Explain the requirements of three layered Architature with Example:

1. Resource Management: Cloud providers

must efficently manage and allocate computing resources ensuring optional utilization and scalibility to meet varying user demands.
Eg:- Amazon web Services (AWS)

- Security Measures:-
Implementing robust security protocols is inperative, encompassing data encryption, identy management, and compliance with industry standards to safeguard user data.

Eg:- Microsoft Azure

Reliability and Availability:-
Ensuring high availibility of services is crucial, requiring redundant systems and fault-tolerant architecture to minimize downtime.

Eg:- Google Cloud Platform (GCP)