Q1 Answers:

1) d
2) c
3) C
4) c
5) b
6) C

Q2 a) What is Virtualization? Explain different types

Answer:

Virtualization is the creation of a virtual version of something...

Types of virtualization:

1. Hardware virtualization : Allows multiple
2. Operating system virtualization : Multiple isolated
3. Network virtualization : Creates virtual networks
4. Storage virtualization : Combines multiple
5. Desktop virtualization : Allows users to...

OR

Q2 c) Compare horizontal and vertical scaling

Answer:

Feature	Horizontal scaling	Vertical scaling
Definition	Increase by adding	Increase by upgrade
Resource Addition	Add more servers	Upgrade existing serve
Cost Efficiency	More cost-effective	Often expensive

Q3 b) What do you mean by scaling a cloud infrastructure ? Discuss

Answer:

Scaling strategies for SaaS application:
1. Vertical Scaling : Increases resources of single server.
- Use case : Database or legacy services
- Pros : simple implementation
- Cons : Limited by hardware

2. Horizontal Scaling : Adds more servers
- Use case : Web servers, stateless APIs
- Pros : Highly scalable
- Cons : Requires load balancing

3. Auto-scaling : Automatically adjusts resources
- Tools : AWS Auto scaling , Azure
- Pros : Cost efficient

Impact of poor capacity planning :
- Under-provisioning : slow performance.
- Over-provisioning : Wasted costs.
- No auto-scaling : Unable to handle traffic spikes