(3 hours) **[80 marks]**

NOTE: Question No 1 is compulsory. Attempt any three questions from remaining.
Assume suitable data if necessary.
Draw neat labelled diagrams wherever needed.

Q.1.	a)	Explain the NIST cloud model.	10M
	b)	State the significance of hypervisors and explain type 1 and type 2 hypervisors in detail.	10M
Q.2.	a)	Explain the implementation levels of virtualization	10M
	b)	Explain the SPI cloud service model.	10M
Q.3.	a)	Explain the components and architecture of openstack.	10M
	b)	Explain Google file System in detail.	10M
Q.4.	a)	Differentiate between AWS S3 storage and Glacier Storage.	10M
	b)	What are the types of instances of Amazon EC2? Explain the AWS EC2 instance life cycle.	10M
Q.5.	a)	Compare AWS and openstack with respect to type of deployment, services supported and their components.	10M
	b)	Explain the significance of network interface, security group and ACL for Amazon VPC.	10M
Q.6.		Write Short Notes on: (Any Four)	20M

a. Cloud Cube Model

b. Anything as a service

c. Benefits and challenges of mobile cloud computing

d. Virtualization Taxonomy

e. Cloud Storage Gateway

f. Cloud Watch

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