

Duration: 3 Hours

[Max Marks:80]

- N.B. :** (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

- 1** Attempt any FOUR [20]
- a Define multi-tenancy. What is the difference between virtual and organic tenancy?
 - b Define virtualization. What is the difference between full, para and hardware assisted virtualization?
 - c How can a cloud application be made scalable?
 - d Explain the groups involved in SAML
 - e Explain fog and edge computing.
- 2** a Explain various implementation levels of virtualization with necessary diagram [10]
- b Explain various layers in the cloud reference model. [10]
- 3** a Explain analytics services in cloud with example of any one cloud service provider [10]
- b How is data security implemented for data at rest and in motion? [10]
- 4** a i) What are the functions of model, view and controller in MVC model? [10]
- ii) What are the benefits and limitations of non-relational databases over relational databases?
- b Explain Apache Cloudstack, Eucalyptus, openstack open source private cloud softwares. [10]
- 5** a Explain how Cloud Storage Gateways (CSGs) provide data protection with its features and necessary diagram. [10]
- b What are the steps involved in case based reasoning? [10]
- 6** a What aspects of cloud computing make it useful for prognostic health management applications for energy systems? [10]
- b List the different streaming methods and explain RTMP streaming,HTTP live streaming and HTTP Dynamic streaming [10]