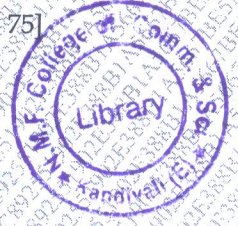


(2 ½ Hours)

[Total Marks: 75]



- N.B. 1) All questions are compulsory.
 2) Figures to the right indicate marks.
 3) Illustrations, in-depth answers and diagrams will be appreciated.
 4) Mixing of sub-questions is not allowed.

Q. 1 Attempt All (Each of 5Marks)**(15M)****(a) Multiple Choice Questions**

- i. Google App engine Provides
 - a. IaaS b. PaaS c. SaaS d. None of these
- ii. Cloud computing is a _____ system and it is necessarily unidirectional in nature.
 - a. stateless b. stateful c. restricted d. None of these
- iii. Three major components of virtualized environment are
 - a. guest, host and port
 - b. guest, host and virtualization layer
 - c. guest, port and virtualization layer
 - d. None of these
- iv. Parallel computing implies
 - a. loosely coupled system
 - b. tightly coupled system
 - c. medium coupled system
 - d. none of these.
- v. Which is not a common virtualization?
 - a. Execution Virtualization
 - b. Network Virtualization
 - c. Storage Virtualization
 - d. Interface Virtualization

(b) Fill in the blanks

(Live migration, live consolidation, native, private, hybrid, heat)

- i. The _____ cloud infrastructure is operated for the exclusive use of an organization.
- ii. Openstack orchestration is performed using _____ component.
- iii. Cloud Bursting happens in _____ cloud.
- iv. Hypervisor that does not need a host operating system is called as _____ hypervisor.
- v. Moving a virtual machine while running from one server to other is called as _____

(c) Short Answers

- i. What is Keystone?
- ii. What is hardware-assisted virtualization?
- iii. What is Type II hypervisor?
- iv. What is SOA?
- v. What is KVM?

- Q. 2 Attempt the following (Any THREE)(Each of 5Marks) (15M)**
- (a) Explain the characteristics of Cloud computing as per NIST.
 - (b) Explain the hardware architecture of Parallel Computing.
 - (c) Write a short note on Amazon EC2.
 - (d) What is utility computing?
 - (e) Explain the concept of Cloud Computing stack.
 - (f) Explain the concept of public, private and hybrid Cloud.

- Q. 3 Attempt the following (Any THREE) (Each of 5Marks) (15M)**
- (a) What is Virtualization? Give the major causes for diffusion of virtualization.
 - (b) Discuss classification or taxonomy of virtualization at different levels.
 - (c) Explain the pros and cons of virtualization.
 - (d) What are the benefits of virtualization in the context of cloud computing?
 - (e) Explain various features of KVM.
 - (f) List some of the challenges in cloud computing.

- Q. 4 Attempt the following (Any THREE) (Each of 5Marks) (15)**
- (a) What is Devstack? Explain the steps to install Devstack.
 - (b) What are the key components of OpenStack?
 - (c) Explain the concept of Quota in Openstack.
 - (d) Explain various deployment models of Openstack.
 - (e) Explain the architecture of Neutron.
 - (f) Explain the architecture of Nova.

- Q. 5 Attempt the following (Any THREE) (Each of 5Marks) (15)**
- (a) Write a short note on Distributed computing.
 - (b) What are the characteristics of virtualized environments?
 - (c) Differentiate between Cinder and Swift in Openstack.
 - (d) Explain the benefits for a start up to implement cloud infrastructure.
 - (e) Explain RPC in detail.