Nirma University

Institute of Technology

Semester End Examination (IR), May - 2018

B. Tech. in Computer Engineering / Information Technology, Semester-VI

IT662 Cloud Computing

Roll / Exam No. | Supervisor's initials With date

Time : 3 Hours | Max. Marks: 100

Instructions:
1. Attempt all questions.
2. Figures to right indicate full marks.
3. Draw neat sketches wherever necessary.
4. Assume necessary data wherever required.

Q-1 Answer the following **[13]**

A Read the following statements: (08)

In cloud infrastructure, where applications have variable and dynamic needs, capacity management and demand prediction are especially complicated.

Describe the various ways through which this type of problems can be solved.

B Discuss the main feature of Map Reduce availed for data-intensive applications. Explain it with any suitable example. (05)

OR

B Which are the basic components of an IaaS based solution for cloud computing? Provide some examples of an IaaS implementation. (05)

Q-2 Do as directed **[17]**

A What are the major distributed computing technologies that led to cloud computing? Contrast and compare. (03)

B How Cloud Computing Interoperability Forum (CCIF) and Open virtual format (OVF) have solved the problem of data lock-in in cloud computing? (06)

C Which are the components that compose the Aneka infrastructure? Discuss the functionality of all the services in brief. (08)

Q-3 Do as directed **[15]**

A How many types of deployment models are used in the cloud? Which one is best and why? (08)

B Discuss the architecture of data centre networking structure. (05)

OR

B Mention how the taxonomy of load balancing algorithms solves the problem of distributing the incoming requests onto a set of physical machines? (05)

C Why should cloud support the concept of multi-tenancy? (02)

Q-4 Answer the following **[15]**

A With the help of a scenario explain how Identity, reputation, and trust can be related to each other. (10)

B Mention the necessity of releasing the VM at the end of the VM lifecycle. Take the appropriate example in support of this. (05)

OR

B Explain the differences in the following two machine recovery schemes. Comment on their implementation requirements, advantages and shortcomings and application potential. (05)

a. Recovery of a physical machine failure by another physical machine.
b. Recovery of a VM failure by another VM.

Q-5 Do as directed **[20]**

A To grow beyond the finite capacity, the cloud computing provider should be able to form a federation, explain how the techniques of the federation can play an important role for sharing of the resources. (04)

OR

A Discuss the reasons for scaling applications across multiple clouds. Suggest ways to leverage the ideas in cloud mashup application. (04)

B Describe the steps for data integration engineering lifecycle with respect to integration methodology. (06)

OR

B Can scheduling techniques be used for resource provisioning in the cloud? Justify with an example. (06)

C Briefly explain the following term associated with cloud security. (10)

a. Distributed Denial of Service
b. Authorisation
c. Authentication
d. Data Integrity
e. Confidentiality

Q-6 Do as directed **[20]**

A What fundamental advantages does cloud technology bring to scientific applications? Discuss cloud application in the field of biology. (09)

B Mention the steps associated with the live migration mechanism for how memory and virtual machine states are being transferred, through the network, from host A to another host B for Xen hypervisor. (05)

C Discuss the various laws formed for data privacy and security issues for cloud computing. (06)

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