No mobile phones

MCSEE30

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M S RAMAIAH INSTITUTE OF TECHNOLOGY

(AUTONOMOUS INSTITUTE, AFFILIATED TO VTU)

BANGALORE – 560 054

SEMESTER END EXAMINATIONS – JANUARY 2015

Course & Branch	:	**M.Tech:- Computer Science and Engineering**	**Semester**	:	**III**
Subject	:	**Cloud Computing**	**Max. Marks**	:	**100**
Subject Code	:	**MCSEE30**	**Duration**	:	**3 Hrs**

Instructions to the Candidates:

- Answer one full question from each unit.
- Support your answers with examples where ever necessary

UNIT – I

1. a) Peer-to-peer systems and clouds share a few goals but not the means to accomplish them. Compare the two classes of systems in terms of architecture, resource management, scope and security. (10)

   b) Differentiate between Soft Modularity and Enforced Modularity. Give suitable examples in each case. (10)

2 a) Compare and Contrast the three cloud computing deliver models. Use suitable diagrammatical representations to support your explanation. (12)

   b) List and briefly explain the important desirable properties of Distributed Systems. (08)

UNIT – II

3. a) Compare the open-source software systems such as *Eucalyptus*, *OpenNebula* and *Nimbus based on their design, cloud type, security accessibility and applications. Give a conclusive analysis of the above comparison made.* (12)

   b) Discuss the architectural styles for cloud application development. (08)

4. a) Outline the workflow organization of *GrepTheWeb* application. Briefly explain the steps involved in the workflow. (12)

   b) Draw a block diagram showing the various components in the Microsoft windows Azure cloud service. Briefly bring out the importance of each component. (08)

UNIT – III

5. a) Justify how layering and interfaces between layers in a computer system support virtualization. Use suitable examples and diagrammatical representations to support your answer. (10)

   b) Briefly discuss the optimization of network virtualization in Xen 2.0 network architecture. (10)

6. a) Draw and briefly explain the taxonomy of process and system Virtual Machines (VMs) for the same and for different Instruction set architectures (ISAs). (10)

   b) Compare full virtualization and paravirtualization as the two basic approaches to processor virtualization. (10)

UNIT – IV

7. a) List the three main sources of instability in any control system. Draw a neat diagram of the two level control architecture and discuss how it would solve the problem of instability. (10)

   b) How are resources allocated in a cloud? Write down the steps in Pricing and Allocation Algorithms and explain them briefly. (10)

8. a) Using suitable diagrammatic representation explain briefly how autonomic performance mangers cooperate to optimize power consumption and still satisfy the requirements of SLA's. (10)

   b) Justify the objectives of a scheduler for real-time and batch system and briefly discuss the scheduling algorithms used for different type of cloud applications. (10)

UNIT – V

9. a) Draw the architecture of the Google File System (GFS) cluster. Discuss few design decisions in the GFS which highlights its advantage. (10)

   b) Who are the three actors involved in the attacks in cloud computing environment. Also Identify top five threats to cloud computing. (10)

10. a) List and briefly discuss the potential problems to cloud security due to virtualization. (10)

    b) Draw and explain briefly the Unix File system and the Network File System (NFS) Client-server interaction. (10)

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