CSPE731

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M S RAMAIAH INSTITUTE OF TECHNOLOGY

(AUTONOMOUS INSTITUTE, AFFILIATED TO VTU)

BANGALORE – 560 054

SEMESTER END EXAMINATIONS – JANUARY 2016

Course & Branch	:	**B.E. - Computer Science & Engg.**	**Semester**	:	**VII**
Subject	:	**Cloud Computing**	**Max. Marks**	:	**100**
Subject Code	:	**CSPE731**	**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)	Compare the three cloud computing delivery models from the point of view of application developers and user. Give suitable examples in each case.	CO1	(10)
	b)	Propose a cloud computing architecture for energy systems such as smart grids/power plants. Discuss the workflow for collecting machine sensor data and an approach for predicting failures.	CO2	(10)
2	a)	With an aid of a neat diagram explain any five basic workflow patterns. Give suitable real world examples in each case to support your answer.	CO1	(10)
	b)	Explain briefly the services offered by Amazon Web Services (AWS) focusing at EC2, the storage and the Management Console of the AWS.	CO2	(10)

UNIT – II

3.	a)	Identify and list the steps involved in the working of MapReduce programming model. Also explain how the model can be applied to Facebook use case: for Social-networking services, to Analyze connections in the graph of friendships and to recommend new connections.	CO4	(10)
	b)	Define Big Data. Explain how the Pregel Programming Model handles the Graph Processing task. Use suitable example to support your answer.	CO2	(10)
4.	a)	Draw the NIST reference Model for Cloud Computing and list the specific functions of each component.	CO1	(10)
	b)	Outline the workflow organization of GrepTheWeb application. Briefly explain the steps involved in the workflow.	CO5	(10)

UNIT – III

5.	a)	Justify how layering and interfaces between layers in a computer system support virtualization. Use suitable examples and diagrammatical representations to explain the same.	CO5	(10)
	b)	What is storage virtualization, list the benefits of it. Draw the taxonomy of storage virtualization and explain briefly how it is implemented.	CO5	(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).	CO4	(10)
	b)	Define desktop virtualization. List the benefits and challenges of deploying desktop virtualization technology.	CO4	(10)

UNIT – IV

7.	a)	List the steps in pricing and allocation algorithms. Outline the working of the ASCA combinatorial auction algorithm and explain the constraints for such an algorithm.	CO6	(10)
	b)	Analyze the benefits and the problems posed by the utility based approach to the implementation of resource management policies in cloud. Explain the same.	CO4	(10)
8.	a)	Justify the objectives of a scheduler for real-time and batch system and briefly discuss the scheduling algorithms suitable for multimedia and real time cloud applications.	CO4	(10)
	b)	Explain using suitable diagrammatical representation, the applications of Control Theory to task scheduling on a cloud.	CO4	(10)

UNIT – V

9.	a)	Discuss some of the top threats to cloud computing and list the Federal Trading Commission Rules for the Legal protection of cloud users.	CO7	(10)
	b)	Explain the potential problems to cloud security due to virtualization. Elaborate on Virtual Security services provided by VMM and the dedicated security VM.	CO6	(10)
10.	a)	List the actors involved in the Attacks in a cloud computing environment and also explain the attacks possible on them.	CO7	(10)
	b)	Briefly discuss the Payment Card Industry Data Security Standard (PCI DSS). Explain any two concerns that need to be addressed before deploying virtualization in the PCI environments.	CO7	(10)

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