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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January 2024 Semester End Main Examinations

Programme: B.E. **Semester: VII**
Branch: Computer Science and Engineering **Duration: 3 hrs.**
Course Code: 21CS7PECCT **Max Marks: 100**
Course: Cloud Computing

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		UNIT - I	*CO*	*PO*	Marks
1	a)	Cloud application deployment lifecycle is an iterative process? Justify.	*CO2*	*PO2*	**6**
	b)	Identify the suitable cloud deployment models for the following scenarios. Justify your answers with suitable advantages: i) A group of hospitals planned to attain a scalable IT infrastructure and faultless business model by outsourcing its IT operations. By digital transformation and upgradation of existing IT infrastructure the organization was able to improve its efficiency, achieve better returns, and continue its day-to-day operations without worrying about outsourcing its IT operations ii) Before 2008, Netflix used relational databases in its data centers. Storing customer details, preferences, and thousands of video content, the company eventually faced a significant issue in the database in 2008. With the growing business needs, customer base, and data storage, Netflix had to rethink the data center situation. Netflix saw the potential in cloud computing way before cloud was on the scene.	*CO1*	*PO1*	**8**
	c)	With the knowledge of various billing services supported by cloud service providers, identify the type of billing service that can be opted by the customers for their following requirements and justify your answer: ➢ User wants to use cloud resources for longer durations and want more control over the cloud expenses. ➢ User wants to use the cloud resources where pricing is driven by market demand. ➢ User wants to use the cloud resources for the short durations and he cannot predict the usage beforehand.	*CO1*	*PO1*	**6**

			UNIT - II			
	2	a)	Differentiate between full virtualization and para virtualization.	*CO2*	*PO2*	**6**
		b)	Analyze the drawback of conventional system used for cross platform portability. Justify and explain how it is overcome in HLL VM environments with a neat diagram.	*CO2*	*PO2*	**6**
		c)	Demonstrate the working of KVM hypervisor with a neat diagram.	*CO1*	*PO1*	**8**
			OR			
	3	a)	Analyze the two implementations of memory virtualization with relevant diagrams.	*CO2*	*PO2*	**6**
		b)	Differentiate between the two implementations of System Virtual Machines with a neat diagram.	*CO2*	*PO2*	**6**
		c)	Assume that an e-commerce application server is running on the virtual machine instantiated on a physical host. If the VM fails, it can be replaced by another VM. But if the underlying host itself fails, the VM must stop functioning. As a result, the application experiences a downtime. Analyze and identify the solution for this problem. Explain the required steps.	*CO2*	*PO2*	**8**
			UNIT - III			
	4	a)	Analyze the interactions among VM managers for cloud creation and management with a neat diagram.	*CO2*	*PO2*	**6**
		b)	Illustrate with a neat diagram the stack of six layers of cloud services.	*CO1*	*PO1*	**6**
		c)	Demonstrate with necessary diagrams the problems associated with static cloud resource provisioning policies. Illustrate with an example the resource-provisioning methods supporting by providers to overcome these problems.	*CO1*	*PO1*	**8**
			OR			
	5	a)	Explain how cloud security is safeguarded by Gateway and Firewalls while accessing private cloud.	*CO1*	*PO1*	**6**
		b)	Demonstrate the reputation system that have been proposed to support trusted cloud services among data center modules with a diagram.	*CO2*	*PO2*	**6**
		c)	Analyze the security solution provided by cloud providers in the following situations: i. DDoS attacks come with wide spread worms. The flooding traffic is large enough to crash the victim server. ii. With shared data files and data sets privacy, security and copyright could be compromised. Users desire to work in a trusted environment that provides useful tools to build cloud applications over protected.	*CO2*	*PO2*	**8**

			UNIT - IV			
	6	a)	Discuss the steps taken place in deployment architecture for compute intensive application with a diagram.	*CO2*	*PO2*	**6**
		b)	Demonstrate the working model of YARN architecture with a neat diagram.	*CO1*	*PO1*	**6**
		c)	Differentiate between the following: **i.** Capacity scheduler developed by Yahoo **ii.** Fair scheduler developed by Facebook	*CO2*	*PO2*	**8**
			UNIT - V			
	7	a)	Explain the architectural design of Kubernetes with a neat diagram.	*CO1*	*PO1*	**6**
		b)	Containers represent a true paradigm shift in the development and operation of large, complicated software systems? Justify.	*CO2*	*PO2*	**6**
		c)	Illustrate with an example scenario the problem faced by developers and operators in deploying the code and running the code. Explain how dockers provides the solution for the same.	*CO2*	*PO2*	**8**

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