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

Autonomous Institute Affiliated to VTU

August 2024 Supplementary 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.

UNIT - I

1 a) Explain Rapid elasticity and Multitenancy characteristics of cloud computing. **6**

b) Illustrate the importance of replication of data in cloud and demonstrate the different replication approaches with diagram. **8**

c) Applying the knowledge of various cloud deployment model, identify and explain the cloud deployment model that is suitable for the following scenarios and justify the same: **6**

- A defense organization needs greater level of security to their data.
- A ecommerce website needs to handle sudden spike in demand. Also, needs to store both critical applications as well as non-critical applications.
- A educational institution wants to store data which is not much critical.

UNIT - II

2 a) Differentiate among Full Virtualization, Para-Virtualization and Hardware-Assisted Virtualization. **6**

b) Discuss the pros and cons of Virtualization technique. Classify the following into Pros and Cons of Virtualization with appropriate justification: **8**

- Latency of Virtual desk
- Use of Multicore processors
- System Security
- Tools lack ability
- Managing and security is difficult

c) Illustrate the execution of critical instructions and non-critical instructions during Binary translation and justify the reason for critical instructions trapped by virtual machine monitor. **6**

OR

3	a)	Demonstrate the steps involved in live migration of a virtual machine.	**6**
	b)	Explain the Hyper V architecture with a neat diagram.	**8**
	c)	Illustrate with an example the concept of Virtual Machines and state the advantages and disadvantages of virtual machine.	**6**

UNIT - III

4	a)	Illustrate with a neat diagram the stack of six layers of cloud services.	**6**
	b)	Demonstrate with necessary diagrams the problems associated with static cloud resource provisioning policies. Illustrate the resource-provisioning methods applied by providers to overcome these problems.	**8**
	c)	Cloud provider usually expects its cloud customers to express a preference regarding where they want their application services to be hosted. Analyse the shortcomings of this expectation and demonstrate solution offered by global exchange of cloud resources through brokering with a diagram.	**6**

OR

5	a)	To support trusted cloud services building a trust overlay network is suggested. Justify the statement with suitable diagram.	**6**
	b)	Demonstrate with a diagram the mapping of cloud models, where special security measures are deployed at various cloud operating levels.	**8**
	c)	Analyse and list the desirable features of a security and privacy protection software for using the cloud by the users.	**6**

UNIT - IV

6	a)	Demonstrate the process of Hadoop Map Reduce job execution with a diagram.	**6**
	b)	Analyze the different scheduling algorithms used by Hadoop and list the configurable properties of those algorithms.	**8**
	c)	Demonstrate a deployment architecture for e-commerce, business-to-business, banking and financial applications with a neat diagram.	**6**

UNIT - V

7	a)	Identify the difference between Docker,Containers and typical Virtual Machine environments with neat diagram and highlight the benefits of Docker.	**6**
	b)	Demonstrate the steps involved in linking your Amazon Web Services account to Docker Cloud.	**8**
	c)	Illustrate how API provides capabilities to understand a system and demonstrate the different API in Kubernetes.	**6**

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