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Question Paper Code : 70450

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Sixth/Seventh/Eighth Semester

CS 8791 – CLOUD COMPUTING

(Common to : Computer Science and Engineering/Computer and Communication Engineering/Artificial Intelligence and Data Science/Computer Science and Business Systems/Information Technology)

(Regulations 2017)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   List four cloud service providers.

2.   Can the following be moved to cloud? Give reasons.
      "Applications that require processing of large amount of data requiring extreme disk input/output operations and low latency".

3.   What is the purpose of adopting SOA for a cloud environment?

4.   "Virtualisation facilitates disaster recovery" — How?

5.   What type of cloud service do you need for a social networking application? Justify your answer.

6.   Give two examples for IaaS and SaaS.

7.   List the cloud security challenges.

8.   What are the security issues to be considered in virtual machines?

9.   What is the use of a combiner in MapReduce programming model?

10.   What is a virtual box?

PART B — (5 × 13 = 65 marks)

11. (a) (i) Formulate a definition for cloud computing by considering and listing its key properties. (8)

(ii) Describe the features of Elasticity and on-demand provisioning in cloud environment. (5)

Or

(b) (i) List the three pros and three cons of developing and hosting a banking application in the cloud environment when compared to hosting it as an ordinary web service and discuss. (7)

(ii) What is a virtual organization? Illustrate with an example. Compare and contrast cloud computing technology with its antecedents. (6)

12. (a) What is virtualization? Describe in detail the different types of virtualization with examples. Bring out the advantages and disadvantages of each and the scenarios where they can be used. (13)

Or

(b) Illustrate hardware-level, ISA-level virtualisation. Explain the differences between them. Give one example VMM (virtual machine monitor), that was built in each of the two categories. (13)

13. (a) Explain in detail layered cloud architecture with the functionality of each layer. (13)

Or

(b) What is Storage as a service? Describe in detail Amazon S3 architecture with a diagram. (13)

14. (a) Discuss in detail any two approaches for resource provisioning in cloud with illustrations. (13)

Or

(b) How is Identify and access management carried out in cloud environment? Illustrate with examples. (13)

15. (a) Justify Google App Engine (GAE) is a Platform as a Service (PaaS) cloud-based web hosting service on Google's infrastructure by discussing on the features offered for the same. (13)

Or

(b) Is Openstack a public/private cloud? Justify by discussing briefly the architecture of Openstack with a block diagram. (13)

PART C — (1 × 15 = 15 marks)

16. (a) Consider a customer needs to use services of heterogenous cloud service providers for his application. For example he needs Openstack private cloud to manage his finances Amazon S3 to manage his storage and EC2 to manage his compute requirements etc. What technique can be used for the same? Explain the 4 levels that can be used for the customer.

Or

(b) Consider a Food delivery Company with branches in four different cities. The company would like to maintain its orders, inventory, payment details, HR details, delivery details in the cloud. What type of cloud deployment model do you prefer? Why? Explain the model and the type of cloud services required for the company.

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