Name:

Enrolment No:



UPES

End Semester Examination, May 2024

Course: Cloud Computing Architecture

Semester: IV

Program: B.Tech CS+CCVT (H/NH) Time : 03 hrs.
Course Code: CSVT2007 Max. Marks: 100

Instructions:

a) Attempt all questions.

b) Question number 9 and 10 has internal choices. Attempt any one

SECTION A (5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	How does Platform as a Service (PaaS) affect different phases of the Software Development Life Cycle (SDLC) in terms of development efficiency and agility?	4	CO1
Q 2	For a cloud-based e-commerce platform experiencing fluctuating traffic, a load balancer is needed a) to distribute HTTP/HTTPS traffic across multiple servers ensuring performance b) Support session persistence, and enabling advanced routing based on URL paths or header values. What type of load balancer is suitable for this architecture? Support your answer with valid arguments.	4	CO2
Q 3	 Match the following cases with <i>Elastic Block Storage</i>, <i>Elastic File Storage and S3</i>. a) Database storage b) Suitable for file storage accessed by multiple EC2 instances concurrently. c) Offers scalable object storage with high durability and availability for various data types. d) Provides file system access to multiple EC2 instances via NFS protocol. e) Backup and Archiving 	4	CO2
Q 4	Define the shared security model for cloud computing and describe its fundamental principle.	4	CO3
Q 5	Define virtual machine migration and its approaches.	4	CO4
	SECTION B (4Qx10M= 40 Marks)		1
Q 6	Explain different types of PaaS approaches in detail with the help of suitable examples.	10	CO1

Q 7	Discuss how cloud bursting architecture facilitates seamless expansion of on-premises infrastructure into the cloud during periods of increased demand. Use suitable diagrams wherever necessary.	10	CO2
Q 8	You are a Consultant Solution Architect for StudentsOnMove.com a social platform for travel enthusiasts. The management has decided to have a cloud based mobile application that is integrated with Big Data analytics application that enables them to post advertisements on the application. They have hired you as a consultant to submit a solution architecture Big Data analytics solutions in the cloud for getting data for their advertisers. Illustrate diagrammatically, and, describe your solution design/process detailing the cloud components/services for any of the cloud platforms.	10	CO3
Q 9	Explain the following: a) NIST CCRA actors b) NIST Cloud broker functionalities c) Security and Privacy in NIST CCRA OR Explain the following: a) Objectives of NIST CCRA Model b) Cloud Consumer and Provider activities c) NIST CCRA Cloud Service Management	(3+4+3)	CO4
	SECTION-C (2Qx20M=40 Marks)		
Q 10	Briefly explain the purpose of the following architectures: a) Hypervisor clustering architecture b) Bare metal provisioning architecture c) Resource reservation architecture d) Non-disruptive service relocation architecture	(5 X4)	
	OR a) Explain the purpose of resource pooling architecture and differentiate		CO3
	 between sibling and nested resource pools. Provide a diagram illustrating the distinction. b) Discuss the specific architecture category to which service load balancer architecture belongs, describe its functioning, and depict the operation of different types of load balancers with suitable diagrams. 	(10+10)	
Q 11	Explain the following: a) NIST vs IBM CCRA b) IBM CCRA actors and roles c) IBM CCRA 3.0 views d) Adoption Patterns IBM CCRA	(5x4=20)	CO4