Name: **Enrolment No:**	

UPES
End Semester Examination, May 2025

Course: Cloud Computing **Semester: VI**
Program: BCA **Time : 03 hrs.**
Course Code: CSBC3024 **Max. Marks: 100**

Instructions:

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	**Which of the following is a key benefit of virtualization?** **A**. Increased physical hardware usage **B.** Decreased system efficiency **C.** Improved resource utilization **D.** Limited scalability	**4**	**CO1**
Q 2	**What is a major shortcoming of traditional IT infrastructures?** **A.** Dynamic resource allocation **B.** High hardware utilization **C.** Limited scalability and flexibility **D.** Centralized control	**4**	**CO1, CO4**
Q 3	**What does "logical equivalence" in virtualization refer to?** **A.** Having identical hardware components **B.** Replicating virtual machines **C.** Mapping virtual resources to physical ones seamlessly **D.** Sharing the same IP address	**4**	**CO1**
Q 4	**Which component is typically found in a pre-virtualization server stack?** **A.** Hypervisor **B**. Virtual network interface **C.** Host operating system only **D.** Multiple guest operating systems	**4**	**CO1,CO 3**
Q 5	**What is the purpose of implementing virtualization in IT environments?** **A.** Increase dependency on physical devices **B.** Reduce hardware abstraction **C.** Improve flexibility, manageability, and cost efficiency **D.** Prevent system upgrades	**4**	**CO2**

SECTION B
(4Qx10M= 40 Marks)

Q 6	What is server virtualization? (3) Name and explain its types. (3) Name three types of server virtualization (4)	**10**	**CO2**
Q 7	Define hypervisor. (3) Differentiate between Type 1 and Type 2 hypervisors. (4) Name one example of each type. (3)	**10**	**CO1**

Q 8	What is desktop virtualization? (3) List its benefits. (4) Explain two challenges of desktop virtualization. (3)	**10**	**CO2**
Q 9	(A)What is network virtualization? (3) Explain the concept of Virtual Private Networks (VPN) and how they work. (4) Discuss the advantages of using VPNs. (3) OR (B)Compare the different types of cloud service models: IaaS, PaaS, and SaaS. (3) Explain how each model contributes to business value. (4) Discuss one real-world example for each model. (3)	**10**	**CO3, CO4**
SECTION-C (2Qx20M=40 Marks)			
Q 10	What is cloud bursting? (4) Explain the concept of multi-tenancy in cloud environments with suitable examples. (6) Discuss how multi-tenancy enhances resource utilization, scalability, and cost-effectiveness in cloud services. (6) Evaluate the challenges and solutions related to multi-tenancy in real-world cloud deployments. (4)	**20**	**CO4**
Q11	(A)Compare the delivery models of cloud services: IaaS, PaaS, and SaaS. (6) Discuss the key differences in infrastructure, platform, and application management across these models. (6) Explain one distinct advantage of using each model with examples. (4) Evaluate how choosing the right model impacts business performance, scalability, and cost. (4) OR (B)Compare CAPEX and OPEX models in IT infrastructure spending. (4) Explain how CAPEX and OPEX considerations influence the choice between public, private, and hybrid cloud models. (6) Create a comparative bar chart showing key financial and operational factors like initial cost, scalability, maintenance, and long-term value across cloud models. (4) Analyse a business scenario and recommend the most suitable cloud model based on CAPEX/OPEX trade-offs, justifying your choice. (6)	**20**	**CO3**