Internal Assessment (Assignment)

Course Code: OMC105D **Last Date of Submission:** 15-Dec-2023

Course Title: Cloud Computing **Assignment Marks**: 30

Assignment No.: 1

Note:

1. The assignment has two parts: **A** and **B**.
2. Part A has ten MCQs carrying one mark each. Answer **ALL** ten MCQs.
3. Part B has eight descriptive questions carrying four marks each. Attempt **any FIVE** questions out of eight.

Part A **(10 × 1 = 10 Marks)**

Answer **all questions** from **A1** to **A10**

Q. No.	Question Statement	Course Outcome
A1	Which cloud service model provides virtualized computing resources over the internet, allowing users to run and manage applications without worrying about the underlying infrastructure?	CO-1
Answer Choices:	a. Infrastructure as a Service (IaaS) b. Platform as a Service (PaaS) c. Software as a Service (SaaS) d. Function as a Service (FaaS)	
A2	What does the term "multi-tenancy" refer to in the context of cloud computing?	CO-1
Answer Choices:	a. The use of multiple cloud providers b. The sharing of computing resources among multiple users or tenants c. The deployment of applications on multiple devices d. The redundancy of data for backup purposes	
A3	What is the primary function of a Platform as a Service (PaaS) in the Cloud Computing Stack?	CO-1
Answer Choices:	a. Provides raw computing resources like virtual machines b. Offers a development platform with tools for building and deploying applications c. Delivers ready-to-use software applications over the internet d. Manages communication between different cloud services	
A4	what is a Virtual Appliance?	CO-2
Answer Choices:	a. A physical server in a data center b. A software application running on a local machine c. A pre-configured virtual machine image with a specific software stack	

	d. A communication protocol for cloud services	
A5	What component of the Cloud Computing Stack is associated with delivering software applications over the internet on a subscription basis?	CO-2
Answer Choices:	a. Infrastructure as a Service (IaaS) b. Platform as a Service (PaaS) c. Software as a Service (SaaS) d. Virtual Appliance Service (VAS)	

A6	Which of the following is an example of a Communication Protocol commonly used in cloud computing for web services?	CO-2
Answer Keys:	a. FTP (File Transfer Protocol) b. SMTP (Simple Mail Transfer Protocol) c. HTTP (Hypertext Transfer Protocol) d. SSH (Secure Shell)	
A7	What is the primary function of a Compute Node in a cloud computing environment?	CO-2
Answer Keys:	a. Network Management b. Storage Management c. Processing and Execution d. Data Backup	
A8	Which of the following is a type of Compute Node that provides lightweight and efficient virtualization, allowing applications to run in isolated environments?	CO-2
Answer Keys:	a. Physical Servers b. Virtual Machines c. Containers d. Hypervisors	
A9	In the context of Compute Nodes, what is a hypervisor?	CO-2
Answer Keys:	a. A software component that manages network connections b. An operating system for containers c. A hardware or software platform that creates and runs virtual machines d. A tool for configuring storage resources	
A10	Which type of compute node allows for the sharing of physical hardware resources among multiple virtual instances?	CO-2
Answer Key	a. Containers b. Hypervisors c. Physical Servers d. Bare Metal Servers	

Part B **(5 × 4 = 20 Marks)**

Attempt **ANY FIVE** questions from Q B1 to Q B8.

Q No.	Question	Course Outcome
B1	Explain the key characteristics that distinguish various cloud deployment models, including public, private, and hybrid clouds. [4 marks].	CO-1
B2	Discuss the service models in cloud computing, namely Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). [4 marks]	CO-1
B3	Provide a comprehensive overview of the Cloud Computing Stack, detailing its layers and the specific components found within each layer [4 marks]	CO-1
B4	Discuss the key elements of cloud infrastructure, including servers, storage, and networking, [4 marks]	CO-2
B5	Describe the characteristics of cloud platforms and how they enable the development, deployment, and management of applications. [4 marks]	CO-2
B6	Explain what virtual appliances are and how they contribute to the efficiency and flexibility of cloud-based solutions. [4 marks]	CO-2

B7	Explore the architecture of Compute Nodes in cloud computing, focusing on their key components and functionalities. [4 marks]	CO-2
B8	Compare and contrast Virtual Machines and Containers as types of Compute Nodes. [4 marks]	CO-2

Course Outcomes:

- **CO-1.** Classify various cloud computing services and models[L-2].
- **CO-2.** Use different compute services in cloud with a case study[L-3].
- **CO-3.** Analyze the benefits and challenges of using cloud-based data storage in comparison to traditional on-premises storage. [L-4].
- **CO-4.** Evaluate the trade-offs between different database features and characteristics, such as consistency, durability, and query capabilities. [L-5].
- **CO-5.** Illustrate various security mechanisms and services available for securing network traffic, such as virtual private clouds (VPCs), network security groups (NSGs), and web application firewalls (WAFs). [L-4].
- **CO-6.** Explain the concept and benefits of a content delivery network (CDN) in distributing and delivering content to users. [L-2].