Internal Assessment (Assignment)

Course Code: OMC105D **Last Date of Submission:** 30-Jan-2024

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

Assignment No.: 2

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	What is a primary characteristic of cloud-based data storage?	CO-1
Answer Choices:	a. Limited accessibility b. Centralized control c. Physical storage on-premises d. Scalable and flexible access	
A2	Which type of cloud storage is designed for creating point-in-time copies of data to protect against data loss?	CO-1
Answer Choices:	a. Object storage b. Backup storage c. File storage d. Block storage	
A3	In the context of database architecture in the cloud, what is a key feature of a horizontally scalable database?	CO-1
Answer Choices:	a. Vertical scaling for increased performance b. Distributing data across multiple servers c. Utilizing a single, powerful server d. Minimizing the number of nodes	
A4	Which data model is commonly associated with relational databases?	CO-2
Answer Choices:	a. Document-oriented data model b. Key-Value data model c. Graph data model d. Tabular data model	
A5	How does a Virtual Private Cloud (VPC) contribute to securing network traffic in a cloud environment?	CO-2
Answer Choices:	a. By using unencrypted communication b. By isolating and providing a private network space c. By allowing unrestricted access to all network nodes d. By relying solely on external firewalls	

A6	What is a key advantage of using a global network infrastructure for Content Delivery Networks (CDNs)?	CO-2
Answer Keys:	a. Increased latency for end-users b. Limited coverage for geographically dispersed users c. Improved content delivery speed across various regions d. Reduced reliance on edge servers	
A7	When considering security measures for cloud services, what is the role of access controls?	CO-2
Answer Keys:	a. Maximizing accessibility to all users b. Reducing the need for authentication c. Restricting unauthorized access to resources d. Eliminating the use of encryption	
A8	What is the primary purpose of Google App Engine?	CO-2
Answer Keys:	a. Cloud storage b. Platform as a Service (PaaS) c. Content Delivery Network (CDN) d. Infrastructure as a Service (IaaS)	
A9	Which service in Google Web Services is specifically designed for serverless computing and allows developers to focus on writing code without managing the underlying infrastructure?	CO-2
Answer Keys:	a. Google Compute Engine b. Google Kubernetes Engine c. Google Cloud Functions d. Google Cloud Storage	
A10	What is the primary cloud computing platform offered by Microsoft for building, deploying, and managing applications and services?	CO-2
Answer Key	a. Windows Server b. Microsoft 365 c. Windows Azure d. Visual Studio	

Part B (5 × 4 = 20 Marks)

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

Q No.	Question	Course Outcome
B1	Explore the various types of cloud storage, focusing on file storage and block storage. Discuss the unique characteristics of each type, and provide examples [4 marks].	CO-1
B2	Provide an in-depth analysis of different database architectures in the cloud, with a focus on the distinctions between vertical scaling and horizontal scaling. [4 marks]	CO-1
B3	Explore the various data models utilized in cloud databases. Compare and contrast relational databases, document-oriented data models, key-value stores, and graph databases [4 marks]	CO-1
B4	Discuss the role of firewalls, intrusion detection systems, Virtual Private Networks (VPNs), and other security measures. [4 marks]	CO-2
B5	Explain how CDNs work, the benefits they offer in terms of latency reduction and improved performance, and provide examples of industries or applications [4 marks]	CO-2

B6	Explore the key features and capabilities of Google App Engine. Discuss how it facilitates the development and deployment of applications in the cloud [4 marks]	CO-2
B7	Explain the concept of multicloud in the context of Google Web Services. Discuss the advantages and challenges associated with utilizing multiple cloud providers simultaneously [4 marks]	CO-2
B8	Discuss how Microsoft's hybrid model, combining on-premises solutions with cloud-based services, contributes to the flexibility and scalability of its offerings [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].