K. K. Wagh Institute of Engineering Education and Research, Nashik

(An Autonomous Institute from A. Y. 2022-23)

MARKING SCHME

Exam Seat No.:

End-Sem Examination-I — Winter 2025

Academic Year: 2025-26 — Sem: I

Class: F.Y — Program: MCA

Branch Code:MCA — Pattern: 2024

Name of Course: Elective I :Cloud Computing — Course Code: 2409505A

Max. Marks: 60 — Duration: 2:30 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

(*keep space*)

1. This question paper contains 2 page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicate the Course Outcome.

Q. No.	Details	Stepwise Marks	Max. Marks	CO No.	BT Level
Q.1	Summarize the key characteristics and benefits of cloud computing highlighting how they support scalable and flexible computing services. (6 Marks)	Characteristics (any three with explanation) – **3 Marks** • Benefits linked to scalability & flexibility – **2 Marks** • Clarity, examples / structure – **1 Mark**	[6]	CO1	L2
Q.2	Compare the service models IaaS, PaaS, and SaaS with suitable examples from platforms like Amazon EC2. (6 Marks)	Definition of each model – **3 Marks** (1 mark each) • Suitable examples (AWS EC2, App Engine, SaaS products) – **2 Marks** • Comparison clarity / presentation – **1 Mark**	[6]	CO2	L2
Q.3	a) Demonstrate the use of Amazon Simple Database Service (SimpleDB) for managing structured data in an e-commerce application scenario. (8 Marks) **OR** b) Show how SQL Azure can be used to support database-as-a-service for a customer relationship	Application of SimpleDB to structured data – **3 Marks** • Querying/indexing & cloud integration – **3 Marks** • Advantages / clarity – **2 Marks** OR CRM data model and features applied – **3 Marks**	[16]	CO3	L3

	management (CRM) system. (8 Marks)	• Security, scalability, availability explained – **3 Marks** • Conclusion / clarity – **2 Marks**			
	c) Implement the Windows Azure Platform Appliance concept in a hypothetical scenario where a company needs a private cloud setup. (8marks) **OR** d) Demonstrate the Google App Engine application lifecycle by creating a workflow for developing, deploying, and updating a cloud-based application. (8marks)	Private cloud requirement + appliance concept – **3 Marks** • Implementation scenario explanation – **3 Marks** • Benefits / justification – **2 Marks** OR Development + deployment workflow – **3 Marks** • Scaling / monitoring / versioning explained – **3 Marks** • Structure, clarity – **2 Marks**		CO3	L3
Q.4	a) Use Serverless Computing to implement a lightweight event-driven function for a real-time application scenario. (8 marks) **OR** b) Implement a build and release process for a cloud-based mobile or web application using DevOps tools. (8 marks)	Serverless concept + real-time trigger – **3 Marks** • Workflow & integration explanation – **3 Marks** • Benefits / clarity – **2 Marks** OR CI/CD pipeline steps – **3 Marks** • Deployment automation in cloud – **3 Marks** • Conclusion / clarity – **2 Marks**	[16]	CO4	L3
	c) Analyze the case of Spotify using Docker and apply similar containerization strategies to enhance performance and deployment efficiency in another media-streaming platform. (8marks)	Explanation of container strategy – **3 Marks** • Applying strategy to another platform – **3 Marks** • Advantages / clarity		CO4	L3

	OR d) Apply cloud-based ECG analysis techniques to design a solution that supports remote patient monitoring in the healthcare domain. (8 marks)	– **2 Marks** OR IoT + cloud workflow for ECG – **3 Marks** • Real-time analysis + alerts – **3 Marks** • Benefits / clarity – **2 Marks**			
Q.5	a) Apply security controls to prevent malicious intermediary and insufficient authorization attacks while accessing SaaS applications. (8 marks) **OR** b) Illustrate the impact of virtualization attacks and describe how isolation mechanisms can be applied to protect virtualized infrastructures. (8 marks)	Controls for malicious intermediary – **3 Marks** • Controls for insufficient authorization – **3 Marks** • Structure / clarity – **2 Marks** OR Any two attack types + impacts – **3 Marks** • Isolation mechanisms explained – **3 Marks** • Structure / clarity – **2 Marks**	[16]	CO5	L3
	c) Apply the economic principles of cloud computing to create a cost-optimized deployment plan for a startup business. (8marks) **OR** d) Implement edge or fog computing concepts to improve latency and efficiency for a smart city IoT application. (8 marks)	Application of cloud cost principles – **3 Marks** • Right-sizing, auto-scaling, managed services – **3 Marks** • Conclusion / clarity – **2 Marks** OR • Scenario & latency issues – **3 Marks** • Edge/Fog improvements – **3 Marks** Structure / clarity – **2 Marks**		CO5	L3