

## IM.Sc. (CSF) Sem.-6 Examination

## ICSF-308

## Cloud Architecture &amp; Security Funds

Time : 2-30 Hours]

April-2025

[Max. Marks : 70

**Question 1 Answer the following questions:**

- i. What are the benefits and challenges of adopting cloud computing in organizations? Provide examples. 7Marks
- ii. Differentiate between traditional IT infrastructure and cloud computing models. 7Marks

**OR**

- i. Discuss the role of virtualization in enabling cloud computing services. 7Marks
- ii. Define cloud computing and explain its key characteristics. 7Marks

**Question 2 Answer the following questions:**

- i. Discuss how business agility is enhanced by adopting cloud computing solutions. 7Marks
- ii. Explain the key components of infrastructure in cloud computing: compute, storage, and networking layers. 7Marks

**OR**

- i. Analyse the advantages and disadvantages of serverless computing within a web service implementation context. 7Marks
- ii. Describe virtualization technologies and their role in enabling cloud infrastructure components (compute, storage, networking). 7Marks

**Question 3 Answer the following questions:**

- i. Discuss the concepts of reliability, availability, and security in cloud-based services and their interdependencies. 7Marks
- ii. What are the key components of cloud economics, and how can organizations optimize costs associated with cloud services? 7Marks

**OR**

- i. Explain the process of vulnerability assessment and penetration testing in cloud environments. Why are they critical for security? 7Marks
- ii. Describe how service-level agreements (SLAs) impact the reliability and performance expectations of cloud services. 7Marks

**Questions 4 Answer the following questions:**

- i. Define Confidential Computing and explain how it enhances data protection within cloud environments through secure enclaves or trusted execution environments (TEEs). 7Marks
- ii. Examine the potential role of blockchain technology in enhancing security within cloud environments, including use cases and benefits. 7Marks

**OR**

- i. Discuss the challenges organizations face when integrating new security technologies into their existing cloud infrastructure while maintaining compliance with regulations. 7Marks
- ii. Explore how organizations can adapt their security strategies to address emerging technologies such as IoT within their cloud infrastructure frameworks. 7Marks

**Questions 5: Attempt any Seven out of Twelve.**

14 Marks

1. What is meant by “cloud computing architecture”?
2. Mention one example of Infrastructure as a Service (IaaS).
3. What is cluster computing?
4. Define grid computing and mention one difference between grid and cloud computing.
5. What is virtualization in the context of cloud computing?
6. Define reliability in the context of cloud-based services.
7. State one metric used to measure scalability in cloud services.
8. What is meant by “cloud economics”?
9. Name one dimension of cloud security controls and briefly explain its purpose.
10. What is continuous monitoring, and why is it important for maintaining security in the cloud?
11. Name one regulation or framework that governs data privacy in the context of global cloud usage (e.g., GDPR).
12. State one challenge organizations face when integrating new security technologies into

.....X.....X.....