

**INSTITUTE OF AERONAUTICAL ENGINEERING**

(Autonomous)

Dundigal-500043, Hyderabad

B.Tech VII SEMESTER END EXAMINATIONS (REGULAR) - DECEMBER 2023

Regulation: UG-20

CLOUD SECURITY

Time: 3 Hours

CSE (CYBER SECURITY)

Max Marks: 70

Answer ALL questions in Module I and II**Answer ONE out of two questions in Modules III, IV and V****All Questions Carry Equal Marks****All parts of the question must be answered in one place only****MODULE – I**

1. (a) Summarize parallel computing and centralized computing. Illustrate in detail about parallel and distributed programming models. [BL: Understand| CO: 1|Marks: 7]
- (b) Outline the similarities and differences between distributed computing, grid computing and cloud computing. [BL: Understand| CO: 1|Marks: 7]

MODULE – II

2. (a) Discuss various ways in which insecure API could cause cloud security threats. [BL: Understand| CO: 2|Marks: 7]
- (b) Implement robust security measures to mitigate cloud security threats of account or service hijacking in cloud environments, organizations. [BL: Apply| CO: 2|Marks: 7]

MODULE – III

3. (a) Summarize about DoS. Implement various cyber security measures to mitigate the cloud security threats of DoS attacks. [BL: Understand| CO: 3|Marks: 7]
- (b) Provide a real-world example of a notable wrapping attack that has occurred in the past. Describe the nature of the attack, its impact, and the counter measures that were implemented to prevent similar attacks in the future.? [BL: Apply| CO: 3|Marks: 7]
4. (a) Outline different security standards . Examine whether the virtualization enhances cloud security. [BL: Understand| CO: 4|Marks: 7]
- (b) What is cloud account hijacking? Differentiate cloud hopper and brone attack. [BL: Understand| CO: 4|Marks: 7]

MODULE – IV

5. (a) Interpret the role of encryption in different cloud security control layers. Explain how encryption is used to protect data at rest, in transit, and during processing. [BL: Understand| CO: 5|Marks: 7]

- (b) Serverless computing offers benefits in terms of scalability and cost-efficiency, but it also introduces unique security challenges. How can you identify and mitigate risks associated with serverless architectures while maintaining a high level of protection?

[BL: Apply| CO: 5|Marks: 7]

6. (a) Discuss about application security and its use. Compose in detail about the aspects of data security.

[BL: Understand| CO: 5|Marks: 7]

- (b) The Kubernetes API serves as a crucial control plane, and securing API access is vital. Explore methods to enforce strict access controls, prevent unauthorized API requests, to detect and respond to the potential API abuse or attacks.

[BL: Apply| CO: 5|Marks: 7]

MODULE – V

7. (a) Write a short note on following:

i) Inter-cloud resource management.

ii) Hybrid cloud and its security implications.

[BL: Understand| CO: 6|Marks: 7]

- (b) Discuss the concept of "Security by Design" in cloud applications and services. How can an organization integrate security considerations early in the development process to prevent vulnerabilities?

[BL: Apply| CO: 6|Marks: 7]

8. (a) Summarize cloud security management. Give some checks to perform to evaluate a cloud service provider's cloud security management.

[BL: Understand| CO: 6|Marks: 7]

- (b) Managing data governance and compliance becomes complex with multiple cloud services. How can an organization effectively enforce data protection regulations and industry standards across diverse cloud environments?

[BL: Apply| CO: 6|Marks: 7]

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