

Enrollment No.....



Faculty of Engineering
End Sem Examination May-2023
OE00056 Cloud Security

Programme: B.Tech.

Branch/Specialisation: All

Duration: 3 Hrs.**Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- Q.1 i. A hash function guarantees the integrity of a message. It guarantees that the message has not be- **1**
(a) Replaced (b) Over view (c) Changed (d) Violated
- ii. A digital signature needs a- **1**
(a) Private-key system (b) Shared-key system
(c) Public-key system (d) All of these
- iii. Which of the following area of cloud computing is uniquely troublesome? **1**
(a) Auditing (b) Data integrity
(c) e-Discovery for legal compliance (d) All of these
- iv. Which of the following model allows vendor to provide security as part of the Service Level Agreement? **1**
(a) SaaS (b) PaaS (c) IaaS (d) None of these
- v. What are the common security threats? **1**
(a) File Shredding (b) File sharing and permission
(c) File corrupting (d) File integrity
- vi. Which of the following is a good practice? **1**
(a) Give full permission for remote transferring
(b) Grant read only permission
(c) Grant limited permission to specified account
(d) Give both read and write permission but not execute
- vii. What are the characteristics of Authorization? **1**
(a) RADIUS and RSA
(b) 3-way handshaking with syn and fin
(c) Multi layered protection for securing resources
(d) Deals with privileges and rights

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- viii. Point out the correct statement: **1**
- (a) Different types of cloud computing service models provide different levels of security services
 - (b) Adapting your on-premises systems to a cloud model requires that you determine what security mechanisms are required and mapping those to controls that exist in your chosen cloud service provider
 - (c) Data should be transferred and stored in an encrypted format for security purpose
 - (d) All of these
- ix. Which of the following services that need to be negotiated in Service Level Agreements? **1**
- (a) Logging (b) Auditing
 - (c) Regulatory compliance (d) All of these
- x. Point out the wrong statement: **1**
- (a) You can use proxy and brokerage services to separate clients from direct access to shared cloud storage
 - (b) Any distributed application has a much greater attack surface than an application that is closely held on a Local Area Network
 - (c) Cloud computing don't have vulnerabilities associated with Internet applications
 - (d) All of these
- Q.2 i. Explain integrity in short. **2**
- ii. Explain algorithms and techniques used in user authentication and authorization in cloud? List some Protocols also. **8**
- OR iii. Write short note on: **8**
- (a) Access control (b) Defence in depth (c) Hashing
- Q.3 i. What is CIA triad? Discuss in brief with suitable examples. **4**
- ii. List and explain cloud security design principles with key aspects of security. **6**
- OR iii. What are security concerns and Risk Mitigation strategies to minimize security risks? **6**
- Q.4 Attempt any two:
- i. Give overview of common security threats in Cloud IAM systems and prevention techniques. **5**
 - ii. Explain identity and access management architecture with diagram. **5**

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- iii. Why do you need identity and access management? What does cloud identity and access management include? **5**
- Q.5 i. Write Short Note on: **4**
- (a) OVF (b) ITU-T X.1601
- ii. What do you understand by term "Availability management"? Why availability management usually focuses on maintaining access for users/systems? **6**
- OR iii. Discuss in brief for high availability for IaaS, PaaS and SaaS in the Cloud. **6**
- Q.6 Write short note on any two:
- i. PCI DSS. **5**
 - ii. Ownership of Cloud Data. **5**
 - iii. Customer challenges of cloud compliance. **5**

Marking Scheme

OE00056 Cloud Security

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|-----|-------|---|---|
| Q.1 | i. | A hash function guarantees the integrity of a message. It guarantees that the message has not be a. Replaced b. Over view c. Changed d. Violated | 1 |
| | ii. | A digital signature needs a a. Private-key system b. Shared-key system c. Public-key system d. All of them | 1 |
| | iii. | Which of the following area of cloud computing is uniquely troublesome? A. Auditing B. Data integrity C. e-Discovery for legal compliance D. All of the mentioned | 1 |
| | iv. | Which of the following model allows vendor to provide security as part of the Service Level Agreement? A. SaaS B. PaaS C. IaaS D. None Of these | 1 |
| | v. | What are the common security threats? a) File Shredding b) File sharing and permission c) File corrupting d) File integrity | 1 |
| | vi. | . Which of the following is a good practice? a) Give full permission for remote transferring b) Grant read only permission c) Grant limited permission to specified account d) Give both read and write permission but not execute | 1 |
| | vii. | What are the characteristics of Authorization? a) RADIUS and RSA b) 3 way handshaking with syn and fin c) Multilayered protection for securing resources d) Deals with privileges and rights | 1 |
| | viii. | Point out the correct statement : a. Different types of cloud computing service models provide different levels of security services b. Adapting your on-premises systems to a cloud model requires that you determine what security mechanisms are required and mapping those to controls that exist in your chosen cloud service provider c. Data should be transferred and stored in an encrypted format for security purpose d. All of the mentioned | 1 |
| | ix. | Which of the following services that need to be negotiated in Service Level Agreements? a. Logging b. Auditing | 1 |

| | | | |
|-----|------|--|---|
| | x. | c. Regulatory compliance d. All of the mentioned Point out the wrong statement : a. You can use proxy and brokerage services to separate clients from direct access to shared cloud storage b. Any distributed application has a much greater attack surface than an application that is closely held on a Local Area Network c. Cloud computing don't have vulnerabilities associated with Internet applications d. All of the mentioned | 1 |
| Q.2 | i. | Explain integrity in short | 2 |
| | i. | Explain algorithms and techniques used in user authentication and authorization in cloud? List some Protocols also. | 8 |
| OR | ii. | Write short note on : a) access control 3 mark b) defence in depth 3 mark c) hashing 2 mark | 8 |
| Q.3 | i. | What is CIA triad? Discuss with suitable examples. Full form 2 mark + Definition 2 marks | 6 |
| | ii. | List and explain cloud security design principles with key aspects of security. Principal 2 mark ,diagram 1 mark list of aspects -3 marks security concerns 2 mark + security concerns 2 mark | 4 |
| OR | iii. | What are security concerns and Risk Mitigation strategies to minimize security risks? | 4 |
| Q.4 | i. | Give overview of common security threats in Cloud IAM systems and prevention techniques. Definition 2 mark +tech 3 mark | 5 |
| | ii. | Explain identity and access management architecture with diagram. Identity and access dana 2 mark +Achi 2 mark +example 1 mark | 5 |
| OR | iii. | Why do you need identity and access management? What does cloud identity and access management include? Identity and acces augment requirement 3 mark +technical induced 2 mark | 5 |
| Q.5 | i. | Write Short Note on : a) OVF 2 mark b) ITU-T X.1601 2 mark | 4 |
| | ii. | What do you understand by term "Availability management"? Why availability management usually focuses on maintaining access for users/systems. Availability management 3+ deification 1 mark +explanation 2 mark | 6 |

OR iii. Discuss in Brief for high availability for IaaS, PaaS and SaaS in the Cloud .Definition IaaS ,PaaS,SaaS 3 mark + description 3 mark **6**

Q.6 Attempt any two:

i. PCI DSS Definition 3 mark + Uses 2 mark **5**

ii. Ownership Of Cloud Data. Main Principal 3 mark +Definition 2 mark **5**

iii. Customer challenges of cloud compliance. Techniques 3 mark + Definition 2 mark **5**
