

[4]

- Q.6 Attempt any two:
- Write about legal and compliance associated with cloud computing. **5** 4 5 1,2
 - How the standards deal with cloud services and virtualization? **5** 2 5 1,2
 - Differentiate the compliance for the cloud provider and compliance for the customer. **5** 2 5 1,2

Total No. of Questions: 6

Total No. of Printed Pages:4

Enrollment No.....



Faculty of Engineering
End Sem Examination Dec 2024
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.

- | | | Marks | BL | CO | PO | PSO |
|--------|--|-------|----|----|----|-----|
| Q.1 i. | Which of the following refers to the violation of the principle if a computer is no more accessible?
(a) Access control (b) Confidentiality
(c) Availability (d) All of these | 1 | 1 | 1 | 2 | |
| ii. | Which one of the following refers to the technique used for verifying the integrity of the message?
(a) Digital signature
(b) Decryption algorithm
(c) Protocol
(d) Message Digest | 1 | 1 | 1 | 2 | |
| iii. | Which of the following has infrastructure security managed and owned by the vendor?
(a) Hybrid
(b) Private/Community
(c) Public
(d) None of these | 1 | 1 | 22 | 2 | |
| iv. | What are the three objectives of information security?
(a) Prevent, detect, respond
(b) Integrity, authenticity, and completeness
(c) Confidentiality, integrity, and availability
(d) Identification, authentication, non-repudiation | 1 | 1 | 3 | 2 | |

v.

1 1 3 2

P.T.O.

[2]

	How does the cloud complicate enterprise identity management?				
	(a) Cloud introduces new and potentially more application types				
	(b) Cloud multiplies integration points between the data centre and third-party providers				
	(c) Cloud increases methods to access IT systems				
	(d) All of these				
vi.	Which of the following is true of the identity-as-a-service (IDaaS) model?	1	1	3	2
	(a) IDaaS is also known as authentication as a service (AaaS)				
	(b) IDaaS uses standards such as Open Authorization (OAuth) and Security Assertion Markup Language (SAML) to facilitate identity management in the cloud				
	(c) Both (a) and (b)				
	(d) None of these				
vii.	SaaS providers manage and secure all the following except:	1	1	4	2
	(a) Infrastructure (b) Access controls				
	(c) Operating system (d) Application stack				
viii.	When is centralized cloud application monitoring most useful?	1	1	4	2
	(a) When applications must span hybrid architectures				
	(b) When applications are hosted solely in the cloud				
	(c) When an organization's applications are all on premises				
	(d) When an organization uses a single cloud application				
ix.	Which of the following services that need to be negotiated in service level agreements?	1	1	5	2
	(a) Logging (b) Auditing				
	(c) Regulatory compliance (d) All of these				
x.	Point out the correct statement:	1	1	5	2

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	(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				
Q.2	i. How is encryption different from hashing?	2	4	1	2
	ii. What is the difference between symmetric and asymmetric encryption?	3	2	1	1
	iii. Explain the concept of stream cipher and block cipher with the help of example.	5	2	1	1
OR	iv. What do you understand by public-key cryptography? Explain with the help of example.	5	1	1	1
Q.3	i. Explain cloud security design principles.	2	1	2	3
	ii. Explain CIA triad and their importance in PaaS, IaaS and SaaS with help of example.	8	2	2	1
OR	iii. Explain the concepts of infrastructure security and also explain their different levels of infrastructure security with the help of example.	8	2	2	1
Q.4	i. What is importance of identity and access management in cloud computing?	3	3	3	1,2
	ii. What is multi-factor authentication? Explain the concept with example.	7	2	3	1,2
OR	iii. Draw and explain the components of identity and access management architecture.	7	3	3	1,2
Q.5	i. Write short note on security management in the cloud.	4	2	4	1,2
	ii. Explain the availability management in IAAS.	6	2	4	1,2
OR	iii. Explain the security management in cloud computing.	6	2	4	1,2

P.T.O

Marking Scheme
OE00056 (T) Cloud Security (T)

Q.1	i.	Which of the following refers to the violation of the principle if a computer is no more accessible? (c) Availability	1
	ii.	Which one of the following refers to the technique used for verifying the integrity of the message? (d) Message Digest	1
	iii.	Which of the following has infrastructure security managed and owned by the vendor? (b) Private/Community	1
	iv.	What are the three objectives of information security? (c) Confidentiality, integrity, and availability	1
	v.	How does the cloud complicate enterprise identity management? (d) All of the above	1
	vi.	Which of the following is true of the identity-as-a-service (IDaaS) model? (c) Both (a) and (b)	1
	vii.	SaaS providers manage and secure all the following except: (b) Access controls	1
	viii.	When is centralized cloud application monitoring most useful? (a) When applications must span hybrid architectures	1
	ix.	Which of the following services that need to be negotiated in Service Level Agreements? (d) All of the mentioned	1
	x.	Point out the correct statement: (d) All of the mentioned	1

Q.2	i.	How is Encryption different from Hashing?	2	
	ii.	What is the difference between Symmetric and Asymmetric encryption?	3	
	iii.	Explain the concept of stream cipher and block cipher with the help of example? Diagram - 2 Marks Explanation with Example - 3 Marks	5	
	OR	iv.	What do you understand by public-key cryptography explain with the help of example? Diagram - 2 Marks Explanation with Example - 3 Marks	5
Q.3	i.	Explain Cloud Security Design Principles?	2	
	ii.	Explain CIA triad and their importance in PaaS, IaaS and SaaS with help of example. Diagram - 3 Marks Explanation with Example - 5 Marks	8	
	OR	iii.	Explain the concepts of Infrastructure Security and also explain their different levels of Infrastructure Security with the help of example. Network Level - 3 Marks Host Level - 3 Marks Application Level - 2 Marks	8
Q.4	i.	What is importance of Identity and Access Management in Cloud Computing?	3	
	ii.	What is multi-Factor authentication. Explain the concept with example? Diagram - 3 Marks Explanation with Example - 4 Marks	7	
	OR	iii.	Draw and explain the components of Identity and Access Management Architecture? Diagram - 3 Marks	7

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Explanation with Example

- 4 Marks

- Q.5 i. Write Short Note on Security Management in the Cloud? **4**
- ii. Explain the Availability Management in IAAS? **6**
- OR iii. Explain the Security Management in Cloud Computing? **6**
- Q.6 Attempt any two:
- i. Write about Legal and Compliance associated with Cloud Computing? **5**
- ii. How the standards deal with cloud services and virtualization? **5**
- iii. Differentiate the compliance for the cloud provider and compliance for the customer? **5**
