A Reg. No. :

Question Paper Code: U8308

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2024

Professional Elective

Computer Science and Business Systems

21ITV308-SECURITY AND PRIVACY IN CLOUD

(Regulations 2021)

(Common to CSE & AI&DS Engineering branches)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. What is the primary focus of risk management in cloud strategy?   CO1 -U

    (a) Eliminating all risks

    (b) Identifying and mitigating risks

    (c) Ignoring risks

    (d) Outsourcing risks

2. Cloud computing is a concept that involves pooling physical resources   CO1 -U
    and offering them as which sort of resource?

    (a) cloud   (b) real   (c) virtual   (d) none of the above

3. Which of the following is NOT a cloud service model?   CO1 -U

    (a) Iaas   (b) Paas   (c) Saas   (d) Haas

4. Which cloud computing deployment model offers dedicated   CO1 -U
    infrastructure for a single organization?

    (a) Public cloud   (b) Private cloud

    (c) Hybrid cloud   (d) Community cloud

5. Which of the following is an example of a deployment model?   CO1 -U

    (a) LAN   (b) VAN   (c) IaaS   (d) VPN

6. Which protocol used in REST?   CO1 -U

   (a) FTP   (b) HTTP   (c) JMX   (d) SOAP

7. Which is the following is a common method for securing data at rest in   CO1 -U
   cloud storage?

   (a) Two – factor authentication   (b) Data masking

   (c) Disk encryption   (d) Session tokens

8. Which encryption technique is commonly used to protect data during   CO1 -U
   transmission in the cloud?

   (a) triple DES   (b) ROT13   (c) Caesar cipher   (d) SSL/TLS

9. Which regulatory compliance standard is often referenced for data   CO1 -U
   protection in the cloud?

   (a) GDPR   (b) HIPAA   (c) PCI DSS   (d) ISO 9001

10. What is the purpose of a cloud access security broker in cloud   CO1 -U
    management?

    (a) To create new virtual machines

    (b) To monitor and manage cloud security policies

    (c) To facilitate data encryption

    (d) To provide cloud-based customer support

PART – B (5 x 2= 10Marks)

11. Explain the principle of network segmentation..   CO1 -U
12. Define cryptography.   CO1 -U
13. How does Just-In-Time access provisioning enhance security in cloud identity? CO1 -U
14. What are the benefits of micro-segmentation   CO1 -U
15. How auto-scaling work in cloud security.   CO1 -U

PART – C (5 x 16= 80Marks)

16. (a) Explain in detail about the fundamentals of cloud security?   CO1 -U   (16)

                                    Or

    (b) Explain the concept of the shared responsibility model in cloud   CO1 -U   (16)
         security.

U8308

17. (a) Explain a risk mitigation strategy to address supply chain security CO2-App (16) in the context of cloud computing, including considerations for third-party vendor assessments and continuous monitoring.

Or

(b) Explain an incident response plan for a cloud-based infrastructure CO2-App (16) to address security breaches or service outages. Outline the roles and responsibilities of team members, the process for incident detection and escalation, and the steps for restoring services and data integrity.

18. (a) Explain the importance of multi-factor authentication (MFA) in CO1 -U (16) enhancing access control security in cloud infrastructure.

Or

(b) Explain the role of an Identity Provider (IdP) in a cloud CO1 -U (16) environment and its functionality in managing user authentication and authorization.

19. (a) Discuss the importance of adhering to security best practices and CO1 -U (16) compliance standards when configuring cloud resources, such as virtual machines, containers, and storage buckets.

Or

(b) Explain the Model-View-View Model (MVVM) pattern and how it CO1 -U (16) facilitates separation of concerns in UI development.

20. (a) How secure management in cloud environments involves CO1 -U (16) implementing robust practices and controls to safeguard administrative access, configuration changes, and operational activities.

Or

(b) Explain the concept of identity federation and its role in enabling CO1 -U (16) single sign-on (SSO) across multiple cloud services and applications.

3

U8308