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Question Paper Code: U2302

M.E. DEGREE EXAMINATION, APRIL / MAY 2025

Second Semester

Computer Science and Engineering

21PCS202- CLOUD COMPUTING

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. What are the main service models of cloud computing? CO1- U
2. An organization experiences downtime in its cloud services, affecting business operations. What strategy can they implement to prevent this? CO2- App
3. How does a Type 1 hypervisor differ from a Type 2 hypervisor? CO1- U
4. A company wants to run multiple applications on a single physical server while keeping them isolated. Which type of virtualization should they use and why? CO2- App
5. Why is encryption important for securing cloud networks? CO1- U
6. An organization wants to back up its cloud data securely. What approach would you take? CO2- App
7. What steps would you take to apply security automation in cloud security management? CO1- U
8. How do data sovereignty laws impact cloud computing security? CO1- U
9. How does Governance, Risk, and Compliance (GRC) improve cloud security management? CO2- App
10. What is Security-as-a-Service (SECaaS)? CO1- U

PART – B (5 x 16= 80 Marks)

11. (a) Explain the differences between Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) with real-world examples. CO1- U (16)
- Or
- (b) Describe the different types of cloud deployment models (Public, Private, Hybrid, and Community clouds) with examples. CO1- U (16)

12. (a) Explain the role of a hypervisor in virtualization. Discuss how hypervisors contribute to efficient resource management and system security CO1- U (16)
- Or
- (b) What are the different types of hypervisors used in virtualization? Compare and contrast Type 1 and Type 2 hypervisors with examples CO1- U (16)
13. (a) What is Identity and Access Management (IAM), and why is it critical for securing cloud services? Discuss its role in authentication, authorization, and access control CO2- U (16)
- Or
- (b) Compare and contrast major IAM authentication protocols used in cloud environments, such as SAML, OAuth, and OpenID Connect. How do they differ in terms of security and implementation? CO2- U (16)
14. (a) A global e-commerce platform using SaaS-based CRM and payment solutions experiences frequent downtime during peak sales periods. How can availability management strategies be applied to ensure seamless operations? CO2- App (16)
- Or
- (b) A university adopts a SaaS-based Learning Management System (LMS) for online education. What availability management best practices can be applied to ensure uninterrupted access for students and faculty? CO2- App (16)
15. (a) Why is internal policy compliance essential for organizations? Discuss its role in ensuring regulatory adherence, security, and operational efficiency. CO2- App (16)
- Or
- (b) What role does governance play in risk management? Discuss how organizations integrate governance principles into enterprise risk management CO2- App (16)