|  |  |
| --- | --- |
| **L. No.** | **TOPICS** |
| L1 | Introduction to Virtualization |
| L2 | Need for Virtualization |
| L3 | Types of Virtualizations – Software Virtualization |
| L4 | Types of Virtualizations – Hardware Virtualization |
| L5 | Hypervisors |
| L6 | Virtual Machines |
| L7 | Benefits of Cloud |
| L8 | Cloud Architecture – Layers and Models |
| L9 | Containers |
| L10 | Kubernetes – Overview |
| L11 | **Data Protection for Cloud –** Cloud Security Challenges, Network Security Model |
| L12 | Guiding Security design principles for cloud computing |
| L13 | Secure Isolation - Comprehensive data protection |
| L14 | End-to-end access control - Monitoring and auditing |
| L15 | CSA, NIST and ENISA guidelines for Cloud Security. |
| L16 | Data Redaction, Tokenization, Obfuscation, assuring data deletion |
| L17 | Data retention, deletion and archiving procedures for tenant data |
| IT1 | Internal test |
| L18 | Data Protection Strategies |
| L19 | **Enforcing Access Control for Cloud Infrastructure based Services -** Common Attack Vectors and Threats |
| L20 | Enforcing Access Control Strategies |
| L21 | Compute Network and Storage |
| L22 | Authentication and Authorization, Role-Based Access Control, Multifactor authentication |
| L23 | Host, Storage and network access control options, OS Hardening and Minimization |
| L24 | Proactive Activity monitoring, Incident Response |
| L25 | Incident Response - Monitoring for unauthorized access, malicious traffic, abuse of system - privileges, events and -alerts |
| L26 | Auditing – Record generation, Reporting and Management |
| L27 | Tamper-proofing audit logs - Quality of Services - Secure Management |
| L28 | User management - Identity management - Security Information and Event Management. |
| L29 | **Data Privacy in Cloud Networks –** Data Privacy - Introduction |
| L30 | Ethics, Privacy Vs Security |
| L31 | Data Representation |
| L32 | Data Collection |
| L33 | Data Use and Data Reuse |
| L34 | Threats to Data Privacy |
| L35 | Anonymization, Privacy Policies |
| L36 | Privacy in Cloud Infrastructure and Big Data |