Graphic Era HILL UNIVERSITY
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University under section 2(f) of UGC Act, 1956

Mid - Term Evaluation (odd) Semester Examination Sept 2025

Roll no. 2294038

Name of the Course: BTech
Semester: VII
Name of the Paper: Security Audit & Compliance - II
Paper Code: TCS -795
Time: 1.5-hour **Maximum Marks: 50**

Note:
(i) Answer all the questions by choosing any one of the sub-questions
(ii) Each question carries 10 marks.

Q1. (10 Marks)

a. Demonstrate the use of SSL in securing an online shopping website. Compare and contrast the OSI Model with the TCP/IP Model in terms of architecture and real-world use. (CO1)

OR

b. Show with an example how Digital Signatures are used in verifying electronic documents. Also explain the role of a Message Digest in this process. (CO1)

Q2. (10 Marks)

a. Evaluate the effectiveness of the Zero Trust Security Model in modern organizations. In your answer, discuss the core principles of Zero Trust policy such as "Never Trust, Always Verify," least privilege access, micro-segmentation, and continuous monitoring. Provide suitable examples. (CO1)

OR

b. Describe how PKI ensures authentication, confidentiality, and integrity, and illustrate with an example how PKI is applied in securing online banking transactions. Finally, evaluate the strengths and limitations of PKI in modern cybersecurity. (CO1)

Q3. (10 Marks)

a. Apply TCP and UDP concepts to identify which protocol would be more suitable for:

- Online video streaming
- File transfer
- Voice over IP (VoIP)

(CO1)

OR

b. Define a Firewall. Explain the different types of firewalls. Analyze the advantages and disadvantages of using on-premises device firewalls versus cloud-based firewall services in terms of cost, scalability, and security. (CO2)

Q4. (10 Marks)

a. Compare network-based vs host-based IDS/IPS. (CO2)

OR

b. Suppose an organization is facing repeated SQL injection attacks. Show how signature-based and anomaly-based systems would detect it differently. (CO2)

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Q5. (10 Marks)

a. Design a secure enterprise architecture that combines firewalls, IDS/IPS, and VPNs (IPSec/SSL) for protecting a multinational organization.

(CO2)

OR

b. Evaluate the effectiveness of Virtual Private Networks (VPNs) in securing modern remote work environments. In your answer, discuss how VPNs provide confidentiality, integrity, authentication, and secure tunneling for data transmission over untrusted networks such as public Wi-Fi. (CO2)