

GURU JAMBHESWAR UNIVERSITY OF SCIENCE AND TECHNOLOGY, HISAR
Centre for distance and online education Programme: Diploma in Cyber Security

Nomenclature: **Ethical Hacking**
Code: DCS-21-T
Credits: 3+0+0

Semester: 2nd
Total Marks: 30

Important Instructions:

- 1) Attempt all Questions each assignment given below
- 2) Each assignment carries 15 marks
- 3) All questions are to be attempted in legible handwriting on plane white A-4 size paper and upload the scanned copy of the assignments on student's portal

Assignment – I

Q1 Define ethical hacking and explain the role of a hacker. How do white hat, black hat, and grey hat hackers differ in their objectives and activities?

Q2 Explain key terminologies such as adware, botnet, phishing, malware, SQL injection, and cross-site scripting. How do these concepts relate to common security vulnerabilities?

Q3 Discuss common ethical hacking tools like Nmap, Metasploit, and Burp Suite. How are these tools used in foot printing and vulnerability assessment?

Assignment - II

Q1 Explain fingerprinting techniques in ethical hacking, including active and passive methods. How are port scanning, ping sweep, and DNS enumeration used to gather target information?

Q2 Describe sniffing techniques and attacks such as ARP poisoning, Man-in-the-Middle (MITM), and DNS poisoning. How can these attacks be detected and prevented?

Q3 Discuss wireless and web hacking techniques using tools like Kismet and sqlmap. How do penetration testing steps and ethical guidelines ensure responsible security assessment?

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Nomenclature: **Cyber Security**
Code: DCS-22-T
Credits: 3+0+0

Semester: 2nd
Total Marks: 30

Important Instructions:

- 1) Attempt all Questions each assignment given below
- 2) Each assignment carries 15 marks
- 3) All questions are to be attempted in legible handwriting on plane white A-4 size paper and upload the scanned copy of the assignments on student's portal

Assignment – I

Q1. Define Cyber Security and explain its importance along with major challenges. How does the CIA Triad help in securing information systems?

Q2. Describe different types of cyber threats such as DoS, DDoS, viruses, worms, and phishing. How do attacks like ransomware and social engineering impact individuals and organizations?

Q3. Discuss common cyber-crimes and vulnerabilities such as hacking, password attacks, weak authentication, and malware threats. How do attackers gain access, hide activities, and cover their tracks in systems?

Assignment - II

Q1 Explain the concepts of access control, authentication, and biometrics in cyber security. How do password policies and device security policies enhance system protection?

Q2 Discuss the role of cryptography, firewalls, and anti-virus systems in securing endpoints. How do practices like patch management and data backup contribute to cyber security?

Q3. Describe the evolution of the Information Technology Act 2000 and its amendments. How do cyber ethics, intellectual property rights, and legal frameworks regulate activities in cyberspace?

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Nomenclature: **Internet and Web Technology**
Code: DCS-23-T
Credits: 3+0+0

Semester: 2nd
Total Marks: 30

Important Instructions:

- 1) Attempt all Questions each assignment given below
- 2) Each assignment carries 15 marks
- 3) All questions are to be attempted in legible handwriting on plane white A-4 size paper and upload the scanned copy of the assignments on student's portal

Assignment – I

- Q1. Explain the concept of the World Wide Web (WWW) and describe how the HTTP protocol works.
- Q2. Differentiate between Internet, Intranet, and Extranet. Also explain the role of an Internet Service Provider (ISP) in accessing the Internet.
- Q3. Describe how to create tables, forms, and graphics in HTML. Explain how to add background colors and animated images to a web page.

Assignment - II

- Q1. What is CSS (Cascading Style Sheets)? Explain the need for CSS and its basic syntax with an example.
- Q2 What is XML? Explain its features and describe the structure of an XML document, including declaration, elements, and nesting.
- Q3. Explain the Document Object Model (DOM). How does JavaScript handle input/output and web page events?

GURU JAMBHESWAR UNIVERSITY OF SCIENCE AND TECHNOLOGY, HISAR
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Nomenclature: **Artificial Intelligence**
Code: DCS-24-T
Credits: 3+0+0

Semester: 2nd
Total Marks: 30

Important Instructions:

- 1) Attempt all Questions each assignment given below
- 2) Each assignment carries 15 marks
- 3) All questions are to be attempted in legible handwriting on plane white A-4 size paper and upload the scanned copy of the assignments on student's portal

Assignment – I

- Q1. Define Artificial Intelligence and explain its importance in modern computing. How does the Turing Test relate to measuring machine intelligence?
- Q2. Compare Depth First Search and Breadth First Search techniques. In which situations is each search strategy more efficient?
- Q3. Explain heuristic search techniques such as Generate and Test, Hill Climbing, and A* algorithm. How does AO* algorithm help in searching AND/OR graphs?

Assignment - II

- Q1. Explain the concepts of propositional logic and predicate logic along with their syntax. How are facts represented and converted into normal and clause form in logic?
- Q2. Discuss the significance of knowledge representation in AI. How do semantic networks and frames differ in representing knowledge structures?
- Q3. Explain fuzzy logic systems and probabilistic reasoning. How does Bayes' theorem support decision making in uncertain environments?

GURU JAMBHESWAR UNIVERSITY OF SCIENCE AND TECHNOLOGY, HISAR
Centre for distance and online education Programme: Diploma in Cyber Security

Nomenclature: **Cloud Computing**

Semester: 2nd

Code: DCS-25-T

Total Marks: 30

Credits: 3+0+0

Important Instructions:

- 1) Attempt all Questions each assignment given below
- 2) Each assignment carries 15 marks
- 3) All questions are to be attempted in legible handwriting on plane white A-4 size paper and upload the scanned copy of the assignments on student's portal

Assignment – I

Q1. Describe the cloud computing architecture with the help of a cloud reference model. Explain IaaS, PaaS, and SaaS with examples.

Q2 What is virtualization? Explain the characteristics of virtualized environments and the taxonomy of virtualization techniques.

Q3 Discuss the historical developments of cloud computing, including distributed systems, cluster computing, grid computing, and virtualization.

Assignment - II

Q1. Explain various applications of cloud computing in different domains such as healthcare, education, and business.

Q2 What are the major security challenges in cloud computing? Explain cloud security fundamentals, design principles, and security architecture.

Q3 Explain the key services provided by Amazon Web Services (AWS), including compute, storage, and communication services.