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| Name: |  |
| Enrolment No: | |

UPES
End Semester Examination, December 2024.

Course: Application Security
Program: BCA-CSF
Course Code: CSSF3020P

Time: 03 hrs
Max. Marks: 100
Semester: 5

Instructions:

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| <ol style="list-style-type: none"> 1. Attempt all questions. 2. Be precise and to the point. 3. Begin answer to each question on a new page of the answer sheet. | <ol style="list-style-type: none"> 4. Provide the question number. 5. Handwriting should be clear. 6. No calculators, electronic gadgets, or graph sheets allowed. |
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NOTE: Answering both questions in a single choice will dismiss both answers.

| S. no. | SECTION A | Marks | CO |
|------------------|---|---------------|----|
| Q1 | What is Application Security, and why is it important? | 2+2 | 1 |
| Q2 | Explain the concept of the Open Web Application Security Project (OWASP) Top Ten and its significance in Application Security. | 2+2 | 2 |
| Q3 | Describe how SQL Injection works and suggest one method to prevent it. | 2+2 | 3 |
| Q4 | What is Cross-Site Scripting (XSS), and how can it be mitigated in web applications? | 2+2 | 4 |
| Q5 | Discuss the role of Authentication and Authorization in Application Security. How do they differ? | 2+2 | 5 |
| SECTION B | | | |
| Q6 | Explain the Software Development Life Cycle (SDLC) and the role of Security in each phase of SDLC. | 10 | 1 |
| Q7 | Describe the three types of Cross-Site Scripting (XSS) attacks: Reflected, Stored, and DOM-Based XSS. Provide an example and a prevention method for each. | 2+2+2 +2+2 | 2 |
| Q8 | What is the principle of Least Privilege, and how does it apply to Application Security? Provide examples of its application. | 10 | 3 |
| Q9 | <p>What are the differences between Symmetric and Asymmetric Encryption, and where are they used in Application Security?</p> <p style="text-align: center;">OR</p> <p>Explain the concept of eavesdropping in application security. How does eavesdropping occur in network communication, and what techniques can be used to prevent it? Provide examples of tools used by attackers for eavesdropping and security measures that organizations can implement to secure data in transit.</p> | 2+2+2 +2+2 | 4 |
| SECTION-C | | | |
| Q10 | Describe Multi-Factor Authentication (MFA) and its significance in Application Security. How does MFA improve security, and what are its limitations? Provide examples of common MFA methods and discuss scenarios where MFA is particularly beneficial. | 20 | 5 |
| Q11 | <p>Explain the importance of Secure Coding Practices in Application Security. Describe three common vulnerabilities that secure coding practices address and the specific practices that can prevent them.</p> <p style="text-align: center;">OR</p> <p>What is Threat Modeling, and how is it applied in the Application Security process? Describe the steps in a threat modeling process and give an example of how threat modeling identifies and mitigates risks.</p> | 20 | 5 |