

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
EIGHTH SEMESTER B.TECH DEGREE EXAMINATION, MAY 2019

Course Code: CS472

Course Name: PRINCIPLES OF INFORMATION SECURITY

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 4 marks.

Marks

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| 1 | What is brute force attack? | (4) |
| 2 | Discuss different types of attacks that can occur in an organization. | (4) |
| 3 | Describe discretionary policies for Biba model. | (4) |
| 4 | What is phishing? Give an example. | (4) |
| 5 | Differentiate between polymorphic and metamorphic worm. | (4) |
| 6 | How do you reduce the impact of XSS vulnerabilities? | (4) |
| 7 | Describe frame spoofing with a neat diagram. | (4) |
| 8 | Describe the security enhancements present in UMTS. | (4) |
| 9 | What is SOAP binding? Explain with the help of a HTTP message. | (4) |
| 10 | List the security threats in RFID based identification and tracking systems. | (4) |

PART B

Answer any two full questions, each carries 9 marks.

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| 11 | a) What is role based access control. Illustrate with suitable example the concept of role inheritance. | (4) |
| | b) Differentiate between Discretionary and Role based access control. | (2) |
| | c) Briefly discuss Mandatory access control implemented in a typical secure operating system. | (3) |
| 12 | a) Demonstrate Chinese wall security model with neat diagram. | (5) |
| | b) Classify each of the following as a violation of confidentiality, integrity, availability or some combination thereof. Also justify your answer. | (4) |
| | i. John copies Mary's homework. | |
| | ii. Paul crashes Linda's system | |
| | iii. Carol changes the amount of Angelo's check from 100 to 1000 | |
| | iv. Gina forges Roger's signature on a deed. | |

- 13 a) Interpret about the star property in Bell -LaPadula model. (4)
b) Write Windows access control algorithm. (5)

PART C

Answer any two full questions, each carries 9 marks.

- 14 a) How Buffer OverFlow (BOF) vulnerability makes software insecure. Explain (5)
different ways in which BOF exploitations occur.
b) Explain XSS vulnerabilities. (4)
- 15 a) Describe Kermack-McKendrick Model of worm propagation. (5)
b) Explain any two categories of topological worms. (4)
- 16 a) Explain how can you detect and prevent SQL Injection vulnerabilities. (5)
b) Name any worm that exploited buffer overflow vulnerability. Explain its (4)
characteristics.

PART D

Answer any two full questions, each carries 12 marks.

- 17 a) Explain link level security provided by Bluetooth. (6)
b) Describe entity authentication and key agreement in GSM Networks. (6)
- 18 a) How security is implemented in online credit card payment systems? (8)
b) What are the main concerns involved in online credit card payment systems? (4)
- 19 a) Explain MAC generation and encryption in CCMP. (6)
b) Explain any two technologies for web services. (6)
