

R18

Code No: 157CC

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, December-2023/January-2024

INFORMATION SECURITY

(Information Technology)

Time: 3 Hours

Max. Marks: 75

Note: i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

- 1.a) Define security service. [2]
- b) List the types of security attacks. [3]
- c) Describe the use of Public key Cryptography. [2]
- d) Define MAC and how it differs from encryption. [3]
- e) Define PGP. [2]
- f) What are the authentication applications? [3]
- g) Illustrate the services provided by IPsec. [2]
- h) What is TLS. [3]
- i) Define Worms in security. [2]
- j) What are the limitations of firewall? [3]

PART – B

(50 Marks)

- 2.a) List and explain the Strength of DES. [5+5]
 - b) Illustrate traffic confidentiality. [5+5]
- OR**
3. Explain in detail about Blowfish algorithm. [10]
- 4.a) Explain Message Authentication Code (MAC) in detail with neat figures. [5+5]
 - b) Explain RSA encryption with an example. [5+5]
- OR**
- 5.a) Describe the steps in finding the message digest using the SHA-512 algorithm. [5+5]
 - b) Explain HMAC. [5+5]
- 6.a) Why does PGP compress the message? What are the reasons for compressing the signature before encryption? [5+5]
 - b) Write a detailed note on X.509 Authentication Service. [5+5]
- OR**
- 7.a) Compare and contrast the key management in PGP and S/MIME. [5+5]
 - b) Explain in detail about Kerberos. [5+5]

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- 8.a) Explain about key management techniques.
- b) Discuss in detail Encapsulating security payload.

[5+5]

OR

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- 9.a) Discuss the requirements of web security.
- b) Draw and explain the IP security architecture.

[5+5]

- 10.a) Write a detailed note on Viruses and related Threats.
- b) Discuss about Trusted System.

[5+5]

OR

- 11.a) Define Firewall. Explain its characteristics, types.
- b) Enumerate Countermeasure for Viruses and Worms.

[5+5]

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QA QA QA QA QA QA QA G