

Code No: RT4104E

R13

Set No. 1

IV B.Tech I Semester Supplementary Examinations, February/March - 2018

NETWORKS SECURITY AND CRYPTOGRAPHY

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 70

Question paper consists of Part-A and Part-B

Answer ALL sub questions from Part-A

Answer any THREE questions from Part-B

PART-A (22 Marks)

1. a) Define Threat and Attack & What are the types of attacks on encrypted message. [4]
- b) What is the block size in DES? What is the cipher key size in DES? What is the round key size in DES? [4]
- c) Find the results of the following using Fermat's theorem:
(i) $5^{15} \text{ mod } 13$ (ii) $15^{18} \text{ mod } 17$ [4]
- d) Define weak collision property of a hash function. [4]
- e) Draw the general format for PGP message. [3]
- f) List down the four phases of virus. [3]

PART-B (3x16 = 48 Marks)

2. a) Discuss the following:
i. ARP attacks, route table modification
ii. Buffer overflow & format string vulnerabilities [8]
- b) Explain the various types of cryptanalytic attacks. [8]
3. a) Explain the Key generation process in data encryption standard (DES) algorithm. [8]
- b) Explain the generation sub key and S Box from the given 32-bit key by Blowfish. [8]
4. a) Discuss clearly about fermat and Eluer's theorem with example. [8]
- b) Perform encryption and decryption using RSA Algorithm with the given P=5; q=13; e=19; M=6. [8]
5. a) Discuss clearly about the objectives of HMAC and it security features. [8]
- b) Write and explain the digital signature algorithm. [8]
6. a) Explain how PGP provides authentication and confidentiality for email services and for the transfer applications. [8]
- b) Discuss about the SSL architecture. [8]
7. a) Discuss about encapsulating security payload of IP. [8]
- b) Explain the types of Host based intrusion detection. List any two IDS software available. [8]