Professional Course Examination, November/December 2019

(5th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Course : BCA–5E2

(Computer Network Security)

Full Marks : 75

Time : 3 hours

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

SECTION—A

(*Marks* : 15)

Tick (✓) the correct answer in the brackets provided :   1×10=10

1. A standalone malware computer program that replicates itself in order to spread to other computer is

   (a) Trojan horse   (   )   *(b)* worm   (   )

   (c) virus   (   )   *(d)* email   (   )

2. A _____ consists of an attacker submitting many passwords or passphrases with the hope of eventually guessing correctly.

   (a) brute force attack   (   )   *(b)* virus   (   )

   (c) Trojan horse   (   )   *(d)* sniffer   (   )

3. DES (Data Encryption Standard) and AES (Advanced Encryption Standard) both are

(a) symmetric block cipher   (   )

(b) asymmetric block cipher   (   )

(c) Both *(a)* and *(b)*   (   )

(d) None of the above   (   )

4. The result of encryption performed on plaintext using an algorithm is

(a) algorithm   (   )   *(b)* plaintext   (   )

(c) ciphertext   (   )   *(d)* binary code   (   )

5. The process or action of proving or showing something to be true, genuine, or valid is

(a) biometric   (   )   *(b)* grand access   (   )

(c) privilege   (   )   *(d)* authentication   (   )

6. A widely used standard for defining digital certificates is

(a) X.509   (   )   *(b)* X.231   (   )

(c) X.305   (   )   *(d)* X.101   (   )

7. A private network acrosses a public network and enables users to send and receive data across shared or public networks as if their computing devices were directly connected to the private network is

(a) WAN   (   )   *(b)* VPN   (   )

(c) LAN   (   )   *(d)* IP   (   )

8. TLS stands for

(a) Termination Level Security   (   )

(b) Transport Level Security   (   )

(c) Transport Layer Security   (   )

(d) Transmission Level Security   (   )

9. Intercepting and logging network traffic that they can 'see' via the wired or wireless network interface is

(a) packet sniffing ( )   (b) firewall ( )

(c) brute force ( )   (d) network tracker ( )

10. A security technique used to identify security weaknesses in a computer system is

(a) firewall ( )

(b) vulnerability scanning ( )

(c) RSA algorithm ( )

(d) packet sniffing ( )

State whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark in the brackets provided :   1×5=5

1. Email bombing intrudes the user by changing the user password.

(T / F)

2. Symmetric key uses the same cryptographic keys for both encryption of plaintext and decryption of ciphertext.

(T / F)

3. Entity authentication is a technique designed to let one party prove the identity of another party.

(T / F)

4. VPN does not need server and client.

(T / F)

5. Worms need a host program in order for them to run.

(T / F)

SECTION—B

(*Marks* : 10)

Answer the following questions :   2×5=10

1. Explain Trojan horse.

2. Write the difference between DES and AES.

3. What is Kerberos?

4. Explain firewall. What are the different types of firewall?

5. Explain how antivirus software detects virus.

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

1. *(a)* Write down the model for Internetwork Security with a neat diagram.   10

OR

(b) Explain the following :   2½×4=10

  (i) Worms

 (ii) Brute force attack

(iii) Phishing

(iv) Spoofing

2. *(a)* Explain the concept symmetric key cryptography. What are the types of symmetric key cryptography?   4+6=10

OR

(b) What is RSA algorithm? Explain the workings with a neat diagram.

4+6=10

3. *(a)* Explain the concept data integrity in network security.   10

OR

(b) What is SHA–1 hash algorithm?   10

4. *(a)* What is TLS? How does it differ from SSL?   10

OR

(b) What is pretty good privacy algorithm?   10

5. *(a)* What is intrusion prevention system? Explain the different types of intrusion prevention system.   3+7=10

OR

(b) What is a network port? Explain the uses of port. Discuss the workings of port scanner in network security.   10

★ ★ ★