UNIVERSITY COLLEGE TATI

UNIVERSITY COLLEGE TATI (UC TATI)

FINAL EXAMINATION QUESTION BOOKLET	
COURSE CODE	: BNS 2223
COURSE	: NETWORK SECURITY
SEMESTER/SESSION	: 2 – 2024/2025
DURATION	: 3 HOURS

Instructions:

1. This booklet contains 5 questions. Answer **ALL** questions.
2. All answers should be written in answer booklet.
3. Write legibly and draw sketches wherever required.
4. If in doubt, raise your hands and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 3 PRINTED PAGES INCLUDING COVER PAGE

QUESTION 1

a) State **SIX (6)** examples of malicious code. (6 marks)

b) Differentiate between encryption and decryption process in cryptography by illustrating a diagram of connection between them. (6 marks)

c) Explain **THREE (3)** goals of network security. (6 marks)

d) List **FOUR (4)** your opinions on how to protect the network. (4 marks)

QUESTION 2

a) List out **SIX (6)** categories of attacker's profile. (6 marks)

b) State **FOUR (4)** comparisons between internal and external threat. (4 marks)

c) What is cryptography and list **TWO (2)** methods of cryptography. (4 marks)

d) List **FOUR (4)** methods of attack used by an attacker. (4 marks)

e) State **FOUR (4)** the causes of computer hacking. (4 marks)

QUESTION 3

a) Explain **THREE (3)** categories of RSA, Diffie Hellman, Caesar Chiper. (6 marks)

b) Encode **'THIS IS VERY CHALLENGING'** using a Caesar cipher with a shift key of **5**. (4 marks)

c) Decrypt this ciphertext **'EQORWVGTUEKGPEG'** using the Caesar cipher with a shift key of **2**. (4 marks)

d) xBank and its customers use a Diffie-Hellman Key Exchange protocol as a method to generate a shared private key with which they can then exchange information across an insecure channel with the following step.

Bank and customers agree on using prime number, n = 47 and primitive root number, g = 43.

Bank sends customers its private number Bankpriv = 3

Customer sends bank its private number Custpriv = 5

Compute the public keys (Bankpup and Custpup) and the secret keys (Banksecrt and Custsecrt) of Diffei-Hellman arrangement protocol utilized by bank and its customers. (8 marks)

QUESTION 4

a) State **FOUR (4)** examples of firewall that are available in market. (4 marks)

b) Illustrate the network diagram with Firewalls and Intrusion Detection System. (6 marks)

c) List **FOUR (4)** limitations and **FOUR (4)** strength of Firewall. (8 marks)

d) State **FOUR (4)** comparisons of between software firewall and hardware firewall. (4 marks)

QUESTION 5

a) Explain **THREE (3)** attacks that used by attackers to retrieve crucial information from a Web server's database. (6 marks)

b) State **SIX (6)** good habits while using a web browser. (6 marks)

----------END OF QUESTIONS----------