UNIVERSITY COLLEGE
TATI

UNIVERSITY COLLEGE TATI (UC TATI)

FINAL EXAMINATION QUESTION BOOKLET	
COURSE CODE	: BNS 2213
COURSE	: INFORMATION 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 <u>5</u> PRINTED PAGES INCLUDING COVER PAGE

INFORMATION SECURITY (BNS 2213)

QUESTION 1

a)   Define the term of Information Security.   (2 marks)

b)   Describe the **THREE (3)** goals of Information Security.   (6 marks)

c)   There are 5.44 billion Internet users in April 2024, consequently they in the risk of vulnerable and threat when go to public network. Define the terms of vulnerable and threat.   (4 marks)

d)   Define the following terms:
   i.   Adware   (2 marks)
   ii. Spyware   (2 marks)
   iii. Malware   (2 marks)
   iv. Keystroke Logging   (2 marks)

QUESTION 2

a)   Explain **TWO (2)** reasons why software as important to security as crypto, access control and protocols.   (4 marks)

b)   State **FOUR (4)** places on where viruses live.   (4 marks)

c)   There are **TWO (2)** types of malware detection which are Misuse and Anomaly Detection. Contrast the way of each types of detection.   (4 marks)

d)   SQL Slammer infecting to the 250,000 systems in just 10 minutes. Identify **ONE (1)** reason on why SQL Slammer was success to infect the system.   (2 marks)

e) Interpret the strategy of Salami Attack, then give **ONE (1)** scenario of Salami Attack.

(4 marks)

f) Describe **ONE (1)** behaviour of Metamorphic Worm. (2 marks)

QUESTION 3

a) Describe **TWO (2)** purposes of Risk Management Planning in Information Security.

(2 marks)

b) Elaborate **THREE (3)** steps in Risk Management Planning. (6 marks)

c) Feasibility analysis in risk control involves **FOUR (4)** keys which are organizational, operational, technical and political. Elaborate each of the feasibility analysis keys.

(8 marks)

d) Differentiate **ONE (1)** advantage and disadvantage between Defense and Transferal.

(2 marks)

e) List **TWO (2)** standard approaches of risk management planning. (2 marks)

QUESTION 4

a) Justify **ONE (1)** reason why the organization needs Information Security planning.

(2 marks)

b)   The following questions are referring to contingency planning on information security.

    i.   Define the term of Contingency Planning.   (2 marks)

    ii.   State **ONE (1)** goal of Contingency Planning.   (2 marks)

c)   There are **FOUR (4)** components of Contingency Planning which are

    i)   Business Impact Analysis (BIA)

    ii)   Incident response planning (IRP)

    iii)   Disaster recovery planning (DRP)

    iv)   Business continuity planning (BCP)

Elaborate each of the components   (8 marks)

c)   There are **THREE (3)** exclusive-use options in continuity strategies for business continuity, which are hot sites, warm sites and cold sites. Distinguish each of exclusive-use options.

(6 marks)

QUESTION 5

a)   Encrypt the message 'We move now' into the ciphertext by using one time-pad with the value of **NCBTZQARX**.   (7 marks)

b)   Use the alphabetical coding scheme based on Table 1 to encrypt the message "august". This message will be encrypt by using Caesar Cipher technique.

(3 marks)

Table 1: Alphabetical Coding Scheme

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C

c)   Use the answer of cipher text generated from question b) to decrypt the message by using the technique of Modified Caesar Cipher technique.   (6 marks)

d) Calculate the key that will be used by Alice and Bob to communicate using the Diffie Helman technique. Values given are;

n=11, p=7, x=3, y=6

(4 marks)

---End of question---------------------------------------