Faculty of Science
End Semester Examination May 2025
FS3SE05 Cyber Security

Programme	:	B. Sc. (Hons.)	Branch/Specialisation	:	FS
Duration	:	3 hours	Maximum Marks	:	60

Note: *All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary. Notations and symbols have their usual meaning.*

	Section 1 (Answer all question(s))	**Marks**	**CO**	**BL**

Q1. What is the primary goal of cybersecurity? — Marks 1, CO 1, BL 1
- ○ Protecting hardware only
- ● Preventing unauthorized access, attacks, and data breaches
- ○ Increasing internet speed
- ○ Removing all cybersecurity threats permanently

Q2. The CIA Triad in cybersecurity stands for- — Marks 1, CO 1, BL 1
- ● Confidentiality, Integrity, Availability
- ○ Cybersecurity, Internet, Authentication
- ○ Control, Information, Accessibility
- ○ Confidentiality, Information, Authorization

Q3. Which of the following is a social engineering attack? — Marks 1, CO 2, BL 1
- ● Phishing
- ○ SQL Injection
- ○ Buffer Overflow
- ○ Brute Force Attack

Q4. What is dumpster diving in cybersecurity? — Marks 1, CO 2, BL 1
- ○ A method of clearing cache memory
- ● Searching for sensitive information in discarded materials
- ○ An advanced cryptographic technique
- ○ A malware attack

Q5. Cross-site scripting (XSS) attacks target- — Marks 1, CO 3, BL 1
- ● Web applications
- ○ Network routers
- ○ Operating system files
- ○ Cryptographic protocols

Q6. Which attack involves injecting malicious SQL queries into a web application? — Marks 1, CO 3, BL 1
- ○ DDoS attack
- ● SQL Injection
- ○ DNS Spoofing
- ○ Phishing

Q7. Which encryption technique uses both a public and private key? — Marks 1, CO 4, BL 1
- ○ Symmetric encryption
- ● Asymmetric encryption
- ○ Hashing
- ○ Steganography

Q8. Which of the following is a hashing algorithm? — Marks 1, CO 4, BL 1
- ○ RSA
- ○ AES
- ● SHA-256
- ○ DES

Q9. Which organization developed the RMF/CSF framework? — Marks 1, CO 5, BL 1
- ○ ISO
- ● NIST
- ○ IT Act India
- ○ PCT DSS

Q10. HIPAA standards are primarily related to- 1 5 1
- ○ Financial regulations
- ◉ Healthcare data protection
- ○ Cloud security
- ○ Web application firewalls

Section 2 (Answer all question(s))

Marks CO BL

Q11. Explain any four security terminologies used in cybersecurity. 2 1 2

Rubric	Marks
0.5 Marks For Each Terminologies	2

Q12. Explain the CIA triad in cybersecurity and its significance. 3 1 2

Rubric	Marks
2 Marks for Explanation 1 Marks for significance	3

Q13. (a) Explain the NIST cybersecurity Framework and its five core functions. 5 1 2

Rubric	Marks
Explanation 2.5 Marks Functions 2.5 Marks	5

(OR)

(b) Name and explain different types of cyber attackers.

Rubric	Marks
Name- 01 Mark Explanation- 04 Marks	5

Section 3 (Answer all question(s))

Marks CO BL

Q14. List any two techniques used in footprinting, reconnaissance, and enumeration in cybersecurity. 2 2 2

Rubric	Marks
01 Marks For Each techniques	2

Q15. (a) Classify different types of malware based on their functionality and explain their effects on a system. 8 2 2

Rubric	Marks
Classification - 04 Marks Effect- 04 Marks	8

(OR)

(b) What are password attacks in cybersecurity? Explain any five types of password attacks and their impact.

Rubric	Marks
Explanation- 03 Marks Types and Explanation- 05 Marks	8

Section 4 (Answer all question(s))

Marks CO BL

Q16. What is an injection attack in cybersecurity? Explain any two types of injection attacks.   3   3   2

Rubric	Marks
Definition- 01 Mark Types and explanation- 02 Marks	3

Q17. (a) What is Cross-Site Scripting (XSS)? Explain its types. How it impact web applications?   7   3   2

Rubric	Marks
Explanation of Cross-Site Scripting (XSS)- 03 Marks Types And Explanation- 02 Marks impact web applications 02 marks	7

(OR)

(b) What is a DDoS (Distributed Denial of Service) attack? Explain its types and impact on organizations.

Rubric	Marks
Explanation of DDoS (Distributed Denial of Service) Attack- 3 Marks Types and Explanation - 02 Marks Impact- 02 Marks	7

Section 5 (Answer all question(s))   Marks CO BL

Q18. What is a digital signature? Explain its purpose. How it ensures security?   4   4   3

Rubric	Marks
Definition- 02 Marks Purpose and Security 02 Marks	4

Q19. (a) Differentiate between symmetric and asymmetric encryption algorithms. Explain their working principles with examples.   6   4   3

Rubric	Marks
Differentiate- 03 Marks Working principles with examples- 03 Marks	6

(OR)

(b) What is the Advanced Encryption Standard (AES)? Explain its working principles and key features.

Rubric	Marks
Definition of Advanced Encryption Standard (AES)- 03 Marks Working principles and key features- 03 Marks	6

Section 6 (Answer any 2 question(s))   Marks CO BL

Q20. What is the ISO 27000 series in cybersecurity? Explain its significance in information security management.   5   5   3

Rubric	Marks
Explanation of ISO 27000 series in cybersecurity- 02 Marks Its significance- 03 Marks	5

Q21. What is PCI DSS (Payment Card Industry Data Security Standard)? Explain its key requirements and importance in cybersecurity. **5   5   3**

Rubric	Marks
Explanation of PCI DSS (Payment Card Industry Data Security Standard)- 02 Marks Its key requirements and importance in cybersecurity- 03 Marks	5

Q22. Compare NIST and HIPAA regulations in cybersecurity. How do they contribute to information security and data protection? **5   5   3**

Rubric	Marks
Compare NIST and HIPAA regulations in cybersecurity- 03 Marks Contribute to information security and data protection- 02 Marks	5

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