

Total No. Of Printed Pages: 2

B.C.A. Semester - V

Computer Science Elective - Cyber Security

[Time: 2:00 Hours]

[Max. Marks: 60]

- Instructions:** i) All questions are compulsory
ii) Figures to the right indicate full marks

Q1. Answer the following:

5 x 1 = 5

A. Match the columns:

- | | |
|------------------------------------|---|
| a. Brute Force Attack | i. Not disclosed data to unauthorized parties |
| b. Asymmetric Encryption algorithm | ii. Suite for Email encryption |
| c. Confidentiality | iii. Forensic Analysis |
| d. Network Miner | iv. Full-disk encryption |
| e. Gpg4win | v. Public Key Cryptography |

B. State Whether the following statements are True or False:

5 x 1 = 5

- PGP(Pretty Good Privacy) provides both confidentiality and authentication services for email.
- Cloud storage is safer than device storage.
- Antivirus software uses only signature-based detection to identify malware.
- Authorization may be biometric.
- A Cryptographic hash function is used to verify the integrity of data without revealing the original data.

Q2 A. What is phishing and how does it work?

2

B. List down three best practices for securing a home Wi-Fi network.

3

C. Explain the concept of IoT(Internet of Things) security. Provide three examples of potential attacks on privacy of IoT devices.

5

Q3	A.	Explain how Tails Operating System enhances user privacy.	2
	B.	Explain the concept of browser fingerprinting. Mention two any two countermeasures to mitigate its risks.	3
	C.	Explain in detail any three anonymous payment methods. Provide one advantage of each in terms of maintaining anonymity.	5
Q4	A.	Differentiate between symmetric and asymmetric cryptography.	2
	B.	With the help of diagram explain how a digital signature ensures non-repudiation.	3
	C.	Explain in detail Kerberos a cryptographic trust model.	5
Q5	A.	Explain the concept of "Dictionary attack" in password cracking.	2
	B.	Compare and contrast White hat, Black hat and Grey hat hackers. How do their motivations and actions differ?	3
	C.	Explain in detail the role of digital laws and legislation in combating cyber crime. How do these laws help in maintaining cyber properties and facilitating e-commerce?	5
Q6	A.	What are the key steps involved in the digital forensics processes?	2
	B.	How does forensic software assist in the investigation of mobile devices?	3
	C.	Discuss the challenges faced in cloud forensics and how they affect the forensic process.	5