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Question Paper Code	12627
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**B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024**

Fourth Semester

**COMPUTER SCIENCE AND ENGINEERING (CYBER SECURITY)**

**20SCPC401 – Cryptography and Cyber Security**

Regulation - 2020

Duration: 3 Hours

Max. Marks: 100

**PART - A (10 × 2 = 20 Marks)**

Answer ALL Questions

	Marks	K-Level	CO
1. Define cryptanalysis.	2	K1	CO1
2. Write about the primary goal of substitution techniques in classical encryption.	2	K1	CO1
3. Compare Rings and Fields.	2	K2	CO2
4. Brief about Abelian group.	2	K1	CO2
5. State Euler's Totient function.	2	K1	CO3
6. Describe the advantages of elliptic curve cryptography over traditional RSA encryption.	2	K2	CO3
7. Define the term "Message Digest".	2	K1	CO4
8. Discuss about Schnorr Digital Signature Scheme in short.	2	K2	CO4
9. State the difference between Software Key Loggers & Hardware Key Loggers.	2	K1	CO5
10. Summarize about network access control.	2	K2	CO5

**PART - B (5 × 13 = 65 Marks)**

Answer ALL Questions

11. a) Write about the OSI security architecture in detail with diagram.	13	K1	CO1
<b>OR</b>			
b) Compute using playfair cipher technique, write its rules and perform encryption for the plain text "ATTACK" with keyword MONARCHY.	13	K1	CO1
12. a) Discuss about AES algorithm with all its round functions in detail.	13	K2	CO2
<b>OR</b>			
b) Discuss the different types of block cipher modes of operation in detail with neat diagram.	13	K2	CO2
13. a) State and Prove Fermat's theorem and Euler's theorem.	13	K2	CO3

**OR**

*K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create*

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- b) i) With an neat sketch explain the Elliptic curve cryptography with an example. 10 K2 CO3  
ii) Illustrate Why ECC is better than RSA? However, why is it not widely used? Defend it. 3 K2 CO3

14. a) i) Write down the steps involved in Elgamal digital signature scheme. 10 K3 CO4  
ii) Tell about Schnorr digital signature scheme. 3 K3 CO4

**OR**

- b) Write about digital signature standard with necessary diagrams in detail. 13 K3 CO4

15. a) Describe the classification of cyber crime in detail. 13 K3 CO5

**OR**

- b) Discuss about the Cybercrime and Information security. 13 K3 CO5

**PART - C (1× 15 = 15 Marks)**

16. a) Write short notes on key-logger and explain in detail about types of Key-logger. 15 K3 CO5

**OR**

- b) Discuss about various Tools and Methods used in Cyber Crimes in detail. 15 K3 CO5