BE1431

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B.E - (Computer) (Semester-VIII)(Revised Course 2019-2020)

EXAMINATION JUNE 2023

Cryptography Techniques For Network Security

[Time: 3:00 Hours] **[Max. Marks:100]**

Instructions:1. Do assumptions whenever necessary.
2. Answer any two full questions form Part A Answer any two full questions from Part B and any one questions from Part C.

Part A

Q1	**a)**	With a suitable diagram explain the model of symmetric cryptosystem. Also explain five in gredients of symmetric encryption scheme.	**8**
	b)	With a suitable example explain Caesar cipher and mono alphabetic cipher in detailed.	**8**
	c)	Explain the strength of DES.	**4**
Q2	**a)**	With a suitable diagram explain output feedback mode. Also explain the advantages of counts mode.	**8**
	b)	With a suitable example explain RSA algorithm.	**8**
	c)	With a suitable diagram explain stream cipher.	**4**
Q3	**a)**	Generate cipher text for the plain text: pay more money using hill cipher also calculate K^{-1} *where* $k = \begin{pmatrix} 17 & 17 & 5 \\ 21 & 18 & 21 \\ 2 & 2 & 9 \end{pmatrix}$	**12**
	b)	With a suitable diagram explain public key crypto systems.	**8**

PART- B

Q4	**a)**	Explain the simplified examples of the use of a Hash function for message Authentication support with suitable diagram.	**8**
	b)	With a suitable diagram explain message digest generation using SHA 512.	**8**
	c)	With a suitable diagram explain two approaches of digital signatures.	**4**
Q5	**a)**	With a suitable diagram explain key distribution and scenario.	**8**
	b)	With a suitable diagram explain secure socket layer architecture.	**8**
	c)	Write a short note on pretty good privacy.	**4**

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Q6	a)	With a suitable example explain X.509 certificate.	8
	b)	With a suitable diagram explain HMAC.	8
	c)	Write a short note on wireless security.	4

PART- C

Q7	a)	With a suitable diagram explain single round of DES algorithm.	8
	b)	Explain RC4 stream generation support your answer with a suitable diagram.	8
	c)	With a suitable diagram explain internal and external errors control using message authentication.	4
Q8	a)	**Explain the following:**	12
		i) HTTPS	
		ii) SS4	
		iii) S/MIME	
		iv) Rotor Machines	
	b)	Explain web security considerations.	8

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