U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

July 2023 Semester End Main Examinations

Programme: B.E. **Semester: VI**
Branch: Electronics & Telecommunication Engineering **Duration: 3 hrs.**
Course Code: 19ET6PE3NS **Max Marks: 100**
Course: Network Security **Date: 17.07.2023**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		UNIT - I	CO	PO	Marks
1	a)	Generate the signature and explain using Elgamel digital signature scheme and verify the signature at receiver end by using an appropriate example.	*CO2*	*PO1*	**06**
	b)	Derive an expression for HMAC algorithm with relevant equation.	*CO2*	*PO1*	**07**
	c)	Explain Brute force attack and cryptanalysis	*CO1*		**07**
		UNIT - II			
2	a)	Obtain the flow diagram for a key distribution scenario where each user shares a unique key with the key distribution center. Specify the steps involved in it.	*CO2*	*PO1*	**10**
	b)	Describe Public key authority in public key distribution scenario	*CO1*		**10**
		OR			
3	a)	With flow diagram explain handshake protocol. Specify the mode of operation at each phase of exchanges.	*CO1*		**10**
	b)	Describe SSL protocol operation with diagram	*CO1*		**05**
	c)	Give functions of S/MIME	*CO1*		**05**
		UNIT - III			
4	a)	With diagram explain generic Network Access Control	*CO1*		**06**
	b)	Explain the EAP protocol exchange in detail with diagram	*CO1*		**06**
	c)	With a neat diagram explain the IEEE 802.1X Access control with timing diagram.	*CO1*		**08**
		OR			
5	a)	With diagram explain encryption scheme for cloud-based database	*CO1*		**06**

		b)	Discuss the cloud security risks and suggested countermeasures.	*CO1*		**08**
		c)	Describe the NIST cloud computing reference Architecture	*CO1*		**06**
			UNIT - IV			
	6	a)	With an example explain cryptocurrency Transactions in block chain networks	*CO1*		**08**
		b)	Describe Distributed consensus with relevant diagram	*CO1*		**06**
		c)	Explain blocks in block chain networks	*CO1*		**06**
			UNIT - V			
	7	a)	Describe verifiable random functions	*CO1*		**06**
		b)	Describe Zero-knowledge systems in block chain	*CO1*		**06**
		c)	Describe Proof-of-work Consensus Model with relevant diagrams	*CO1*		**08**

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