

# CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

BIC401

## Fourth Semester B.E./B.Tech. Degree Examination, June/July 2025 Elements of Cyber Security and IoT

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Explain a basic firewalled network.	10	L2	CO1
	b.	Explain the role of each one of 7 layers in OSI model.	10	L2	CO1
OR					
Q.2	a.	Write a note on Hub, Switch, Router.	10	L2	CO1
	b.	Explain the concept about collisions and broadcast domains.	04	L2	CO1
	c.	Explain the importance of IP addressing with an example.	06	L2	CO1
Module – 2					
Q.3	a.	Explain about Pay-per click business model.	08	L2	CO2
	b.	Explain shell code execution in a stack buffer overflow.	06	L2	CO2
	c.	Write a note on Race Condition.	06	L2	CO2
OR					
Q.4	a.	Explain the concept centralized botnet infrastructure.	08	L2	CO2
	b.	Explain the concept of Stack Based Buffer overflow.	06	L2	CO2
	c.	Write a note on SQL Injection.	06	L2	CO2
Module – 3					
Q.5	a.	Explain the concept of A cross site scripting (XSS) worm spreads between twitter accounts via an XSS attack.	07	L2	CO3
	b.	Explain logic for an actor creating a virtual machine obfuscated binary.	07	L2	CO3
	c.	Explain the concept of viruses and malware.	06	L2	CO3
OR					
Q.6	a.	Explain how System Service Descriptor Table (SSDT) resources kernel mode functions into addresses.	07	L2	CO3
	b.	Write different steps involved in spyware creators take to make money.	07	L2	CO3
	c.	Explain a visual representation of token kidnapping process.	06	L2	CO3
1 of 2					

## Module – 4

Q.7	a.	Explain the genesis of IoT with evolutionary phases of the internet.	08	L2	C04
	b.	Explain the concept of convergence of IT and OT. Also compare Operational Technology (OT) and Information Technology (IT).	07	L2	C04
	c.	Write a note on Micro Electro Mechanical System (MEMS).	05	L2	C04

## OR

Q.8	a.	Explain IoT impacts on various Technological aspects and Environment.	08	L2	C04
	b.	Explain the concept of Sensor Network.	07	L2	C04
	c.	Explain the different trends in Smart Objects.	05	L2	C04

## Module – 5

Q.9	a.	Explain the protocol stack 802.15.4 and also explain zigbee protocol stack, physical layer and MAC layer.	12	L2	C05
	b.	Explain the concept of optimizing Internet Protocol for IoT.	08	L2	C05

## OR

Q.10	a.	Explain IoT application layer protocols and also write a note on COAP (Constrained Application Protocol).	12	L2	C05
	b.	What is an unconstrained network? Explain IEEE 802.11 Wi-Fi with physical and MAC layer.	08	L2	C05

\*\*\*\*\*