

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)*

UG/PG DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026

*Fourth Semester**Electronics and Communication Engineering*

UECTL24401 – NETWORKS AND SECURITY

*Regulations – 2024**Duration : 3 Hrs**Maximum : 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)***

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	Define Bluetooth.	L1	1	2
2.	Differentiate TCP/IP model and OSI Model.	L2	1	2
3.	What is Multicast routing?	L1	2	2
4.	Infer IPv4 to IPv6 transition.	L1	2	2
5.	Distinguish between TCP and UDP.	L2	3	2
6.	Define Congestion Control	L1	3	2
7.	What is Digital Signature?	L1	4	2
8.	Label the role of firewalls in network security.	L1	4	2
9.	What is a Trojan?	L1	5	2
10.	Relate the basics of Blockchain Technology.	L2	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
11.	a Explain the OSI model with neat diagram and layer-wise functions.	L2	1	16
	Or			
	b Compare error detection and correction techniques with examples.	L2	1	16
12.	a Discuss Network Layer protocols IP, ICMP, Mobile IP in detail.	L2	2	16
	Or			
	b Explain Dijkstra's algorithm with a suitable example.	L2	2	16
13.	a Describe TCP connection establishment and termination with state diagram.	L2	3	16
	Or			
	b Explain application layer protocols – DNS, HTTP, Email architecture	L2	3	16
14.	a i Describe various security services and mechanisms in network security.	L2	4	8
	ii Explain different types of Network Attacks.	L2	4	8
	Or			
	b Interpret AES algorithm with a block diagram.	L2	4	16

15.	a	Examine the different types of hardware attacks (Trojan, Side-channel, physical attacks) and suggest suitable countermeasures.	L4	5	16
		Or			
	b	Organize a secure hardware system considering threats, vulnerabilities and countermeasures. Explain your design approach.	L4	5	16