

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***UG/PG DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026***Fourth Semester**Artificial Intelligence and Data Science***UCSTL24501 / CS3591 - COMPUTER NETWORKS***(Common to Fifth Semester Computer Science and Engineering)**Regulations - 2024 & 2021**Duration : 3 Hrs**Maximum : 100 Marks***PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Define socket.	L1	1	2
2.	Differentiate between HTTP and FTP Protocol.	L4	1	2
3.	What is the purpose of the transport layer in the OSI model?	L1	2	2
4.	What is Quality of Service in networking?	L1	2	2
5.	Find the number of bits for the subnet mask (e.g 24 Bits).	L1	3	2
6.	What is Subnetting?	L1	3	2
7.	What is unicast routing?	L1	4	2
8.	Define Distance Vector Routing.	L1	4	2
9.	Define circuit switching.	L1	5	2
10.	Define Virtual LAN.	L1	5	2

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

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Describe the OSI reference model in detail, explaining the functions of each layer.	L2	1	16
	Or			
	b Write in detail about SMTP protocol and FTP protocol with suitable example.	L2	1	16
12.	a Describe the process of connection management in TCP. Explain how flow control mechanisms work in TCP.	L2	2	16
	Or			
	b Discuss the congestion control techniques DECbit, RED, and their role in preventing network congestion.	L2	2	16
13.	a Discuss the differences between IPv4 and IPv6 in terms of addressing, header structure, and protocol features.	L2	3	16
	Or			
	b Explain the functioning of ARP and RARP in network communication.	L2	3	16

14.	a	Discuss the operation of RIP and OSPF routing protocols. Compare their advantages and limitations.	L2	4	16
		Or			
	b	Describe BGP protocol and its routing functionality in detail.	L2	4	16
15.	a	Discuss the Media Access Control mechanisms used in Ethernet. How does CSMA/CD help in collision detection and prevention?	L2	5	16
		Or			
	b	Discuss the different types of transmission media and the role of the Physical Layer in managing data transfer. Explain the concepts of switching and circuit-switching in physical layer communication.	L2	5	16