Reg. No. | | | | | | | | |

G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.

UG DEGREE END SEMESTER EXAMINATIONS - APRIL 2025.
(For those admitted in June 2021 and later)

PROGRAMME AND BRANCH: B.Sc., INFORMATION TECHNOLOGY

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
VI	PART-III	CORE	U21IT609	DATA COMMUNICATION AND NETWORKING

Date & Session: 24.04.2025/FN **Time : 3 hours** **Maximum: 75 Marks**

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer ALL Questions.
CO1	K1	1.	Over the physical medium, which layer of the OSI model is responsible for data transmission? a) Physical Layer b) Data-Link Layer c) Network Layer d) Transport Layer
CO1	K2	2.	How many layers are in the OSI model? a) 5 b)6 c) 7 d)8
CO2	K1	3.	What is the size of MAC address in medium access control sub layer? a) 48 bytes b) 48 bits c) 32 bits d) 32 bytes
CO2	K2	4.	Choose the standard protocol for wired Ethernet. a) IEEE 802.1 b) IEEE 802.3 c) IEEE 802.11 d) IEEE 802.5
CO3	K1	5.	Representation of IPv4 addresses are in: a) Binary format b) Hexadecimal format c) Dotted decimal notation d) Octal notation
CO3	K2	6.	Select the maximum address length of an IPv6 address? a) 64 bits b) 128 bits c) 256 bits d) 512 bits
CO4	K1	7.	Pick the purpose of the Domain Name System (DNS)? a) Translate domain names into IP addresses b) Secure email communication c) Encrypt data d) Transmit files
CO4	K2	8.	What is the main advantage of UDP? a) More overload b) Reliable c) Low overhead d) Fast
CO5	K1	9.	Which ensures message confidentiality in network security? a) Hashing b) Encryption c) Authentication d) Digital Signature
CO5	K2	10.	The process of converting plain text to cipher text is called_____. a) Decryption b) Translation c) Conversion d) Encryption

Course Outcome	Bloom's K-level	Q. No.	SECTION – B (5 X 5 = 25 Marks) Answer ALL Questions choosing either (a) or (b)
CO1	K3	11a.	Differentiate between the OSI model and the TCP/IP protocol suite. **(OR)**
CO1	K3	11b.	Explain the characteristics and types of guided media in the physical layer.
CO2	K3	12a.	What is the role of MAC addressing in data-link layer protocols? **(OR)**
CO2	K3	12b.	Describe the functionality of the HDLC protocol.
CO3	K4	13a.	Discuss IPv4 addressing scheme with clear examples. **(OR)**
CO3	K4	13b.	Explain the purpose of ICMP? How is it used in networking?
CO4	K4	14a.	Examine TCP (Transport Layer protocol) and services. **(OR)**
CO4	K4	14b.	Illustrate the working of HTTP in the application layer.
CO5	K5	15a.	Critique digital signature and message authentication. **(OR)**
CO5	K5	15b.	Evaluate message integrity and message confidentiality.

Course Outcome	Bloom's K-level	Q. No.	SECTION – C (5 X 8 = 40 Marks) Answer ALL Questions choosing either (a) or (b)
CO1	K3	16a.	Explain the OSI model and functionality of each layer. (OR)
CO1	K3	16b.	Identify the differences between circuit switching and packet switching.
CO2	K4	17a.	Compare random access methods with controlled access methods in media access control. **(OR)**
CO2	K4	17b.	Analyze IEEE 802.11 working in Wireless LANs and its architecture diagram.
CO3	K4	18a.	Describe in brief the process of packet forwarding in IPv4. **(OR)**
CO3	K4	18b.	Explain the differences between multicast, and broadcast of networking.
CO4	K5	19a.	Evaluate TCP (Transmission Control Protocol). Explain its applications. **(OR)**
CO4	K5	19b.	Justify FTP protocol and its applications.
CO5	K5	20a.	Criticize network security and its role in ensuring confidentiality. **(OR)**
CO5	K5	20b.	Assess the role of key management in network security.