



R22 Regulation

Subject code: 4P5DB

# TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

**B.Tech V Semester Supplementary Examinations, May 2025**

## DATA COMMUNICATIONS AND COMPUTER NETWORKS (ECE)

Maximum Marks: 60

Date: 24.06.2025

Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
  2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
  3. Part B consists of 5 Units. Answer any one full question from each unit.
  4. Each question carries 10 marks and may have a, b, c, d as sub questions.

### Part-A

All the following questions carry equal marks		(10X1M=10 Marks)	Marks	CO	Bloom Tx
1.a)	Explain the network criteria.		1M	1	L1
b)	Define the protocol and standard.		1M	1	L1
c)	Explain the type of errors.		1M	2	L1
d)	List and explain the multiple access protocol.		1M	2	L1
e)	Explain the datagram format.		1M	3	L1
f)	Why need of IP protocol.		1M	3	L1
g)	What are the advantages of UDP over TCP.		1M	4	L1
h)	Compare between TCP and UDP?		1M	4	L1
i)	What is the role of a DNS server in the internet infrastructure?		1M	5	L1
j)	How does HTTP handle client-server communication in a request-response cycle?		1M	5	L1

### Part-B

Answer All the following questions.		(5X10M=50Marks)	Marks	CO	Bloom Tx
2	Explain the layers of OSI model in detail.		10M	1	L2
OR					
3	a) Explain the difference between layers of OSI model and TCP/IP protocol suit. b) Discuss the addressing and wireless links.		5M 5M	1	L2 L2
4	a) Explain the procedure of CRC mechanism. b) Explain the check summing error detection method.		5M 5M	2	L3
OR					
5	a) Explain the ALOHA protocol. b) Discuss the Services Provided by the Link Layer		5M 5M	2	L2 L2
6	a) Explain the virtual circuit networks. b) Discuss the Ipv4 addressing.		5M 5M	3	L2 L2
OR					
7	a) Explain the ICMP Protocol. b) Discuss about the IPv6 protocol.		5M 5M	3	L2 L2

8	Describe the three-way handshake process in TCP. What are the three phases and what happens during each?	10M	4	L2 L2
OR				
9	Describe the structure of a UDP packet.	10M	4	L1
10	a) How is SMTP used in sending emails over the internet? b) Explain the Data Encryption Standard algorithm.	5M 5M	5	L1
OR				
11	a) What is an email client and how does it interact with email servers? b) Explain the Advanced Encryption Standard (AES) algorithm.	5M 5M	5	L1