R20 Regulation *Subject code:3E6DD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, May 2025

TELECOMMUNICATION SWITCHING SYSTEMS AND NETWORKS

(ECE)

Maximum Marks: 70 Date: 25.06.2025 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 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 (10X2M=20 Marks)		Marks	CO	BTL
1	How traffic can be measured?	2M	1	L1
2	How the switching systems can be classified?	2M	1	L1
3	What is Time Division Switching?	2M	2	L1
4	What is traffic?	2M	2	L1
5	List two types of congestion.	2M	3	L1
6	Define CCS.	2M	3	L1
7	What is the use of modem?	2M	4	L1
8	What is charging plan?	2M	4	L1
9	What is a virtual tributary?	2M	5	L1
10	List any two services of ISDN.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	What are the different types signaling tone in automatic exchange. Draw the waves signaling tones?	10M	1	L2
	OR			
12	What is the basic principle of cross bar? With necessary diagrams explain the operation?	10M	1	L2
13	Explain the Difference between single stage and multistage networks.	10M	2	L2
	OR			
14	What is time multiplexed space switching? With a neat diagram explain its operation.	10M	2	L2
15	a)Define congestion. b)During the busy hour, 1200 calls were offered to a group of trunks and six calls were lost. The average call duration was 3 minutes. Find: (i) The traffic offered (ii) The traffic carried (iii) The traffic lost (iv) The grade of service	2M 8M	3	L2
	OR			
16	a)Define delay probability and flow control.	5M	3	L2

	b)Explain briefly about unit of traffic or traffic intensity.	5M		
17	Describe the various signaling techniques. Compare in-channel signaling with common channel signaling, which is more advantageous.	10M	4	L2
	OR			
18	Explain about the Switching Hierarchy and Routing used in telephone networks with a neat sketch.	10M	4	L2
19	With neat diagram, explain the SONET components. Explain the SONE T network and its layers with neat diagrams?	10M	5	L2
	OR			
20	What do you mean by numbering and addressing? Draw the ISDN address structure and explain how the addressing works?	10M	5	L2