R20 Regulation *Subject code: 3E6DD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, April 2026

TELECOMMUNICATION SWTCHING SYSTEMS AND NETWORKS

(ECE)

Maximum Marks: 70 Date: 23.04.2026 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	Define called subscriber.	2M	1	L1
2	Define Switching system.	2M	1	L1
3	What is stored program control?	2M	2	L1
4	What are the two features of TST?	2M	2	L1
5	Define Holding time.	2M	3	L1
6	Define traffic.	2M	3	L1
7	Define LAN.	2M	4	L1
8	What are seven layers of ISO-OSI architecture?	2M	4	L1
9	What is MODEM?	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	Illustrate the configuration of a crossbar switching system using a neat diagram.	10M	1	L2
	OR			
12	Classify in detail the different types of switching systems.	10M	1	L2
13	Analyze and explain the principles of operation of centralized SPC	10M	2	L2
	OR			
14	Examine and discuss the basic structure and principle of operation of a Time Slot Interchange (TSI) switch, including a neat diagram.	10M	2	L2
15	(a) Analyze and describe the typical telephone traffic pattern on a working day. (b) On average, one call arrives every 5 seconds. During a period of 10 seconds, what is the probability that:(i) No call arrives (ii) One call arrives (iii)Two calls arrive (iv) Two calls arrive.	5M 5M	3	L2
	OR			
16	Analyze the typical telephone traffic patterns.	10M	3	L2
17	Explain the in-channel signaling and common channel signaling.	10M	4	L2

	OR			
18	Describe network & protocol architecture of ISDN.	10M	4	L2
19	Discuss the components of SONET. Explain the SONET network architecture.	10M	5	L2
	OR			
20	Explain the ISDN address structure and explain the functioning of addressing within ISDN.	10M	5	L2