R20 Regulation *Subject code: 3E6DD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Regular/Supplementary Examinations, July 2024

TELECOMMUNICATION SWITCHING SYSTEMS AND NETWORKS

(ELECTRONICS & COMMUNICATION ENGINEERING)

Maximum Marks: 70 Date:30.06.2024 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 which carries 10M.
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)		CO	Bloom Tx
1	List the requirements of an effective switching system.	CO1	BL2
2	What are the unique features of cross bar switches?	CO1	BL1
3	Compare centralized SPC and distributed SPC.	CO2	BL2
4	What are the features of TST?	CO2	BL1
5	Define busy hours.	CO3	BL3
6	Define loss systems.	CO3	BL1
7	Define charging plan.	CO4	BL1
8	Relate Baud and bit rate.	CO4	BL2
9	What is ADSL?	CO5	BL1
10	Why SONET is called a synchronous network?	CO5	BL1
	Part-B		
Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	A. Explain the working principle of cross bar switch with a neat diagram. B. Explain the elements of switching systems. (5+5)	CO1	BL2
	OR		
12	Explain the working of strowger switching components i. Uniselector ii. Two motion selector (5+5)	CO1	BL2
13	A. Write about Space Division Switching. B. Explain the two-stage combination switching. (5+5)	CO2	BL3
	OR		
14	A. With a neat diagram, explain time multiplexed time switching. B. Explain Three Stage Combination Switching. (5+5)	CO2	BL3
15	A. On an average during the busy hour, a company makes 120 outgoing calls of average duration 2 minutes. It receives 200 incoming calls of average duration 3 minutes. Find the Outgoing traffic, Incoming traffic and Total traffic.	CO3	BL4

	B. If sequential is used for the group of trunks is offered 2E of traffic. Then how much is the traffic carried by the first-choice trunk and the last choice trunk? (5+5)		
	OR		
16	Explain Erlang and congestion in detail. (10)	CO3	BL4
17	A. Compare In-channel signaling and common channel signaling. B. Explain different modes of operation of common channel signaling. (5+5)	CO4	BL3
	OR		
18	Describe the LAN, MAN, and WAN and list advantages and disadvantages of each network. (10)	CO4	BL2
19	Describe the network and protocol architecture of ISDN. (10)	CO5	BL3
	OR		
20	A. Discuss DSL technology. B. Write about SONET devices, frame and transmission. (5+5)	CO5	BL2