GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2022

Subject Code:2161009   **Date:10/06/2022**

Subject Name:Telecommunication Switching and Applications

Time:10:30 AM TO 01:00 PM   **Total Marks: 70**

Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Discuss Classification of Switching System	**03**
	(b)	Explain following terms in brief: 1 Grade of Service 2 Peak Busy Hour 3 CDMA 4 QAM	**04**
	(c)	Draw Elements of a switching system and discuss basics of a Switching system.	**07**
Q.2	**(a)**	Define the following terms: (i) Trunks (ii) Blocking probability (iii) MAN	**03**
	(b)	Discuss standby dual processor configuration.	**04**
	(c)	Compare Single stage vs Multistage networks in space division switching.	**07**
		OR	
	(c)	Explain Two- stage networks in space division switching.	**07**
Q.3	**(a)**	Compare Microprogrammed control and Hard –wired control electronic control schemes.	**03**
	(b)	Calculate the maximum access time that can be permitted for the data and control memories in a TSI switch with a single input and single output trunk multiplexing 2500 channels. Also estimate the cost of the switch and compare it with that of a single stage space division switch.	**04**
	(c)	Discuss Time Multiplexed Time Switching in detail.	**07**
		OR	
Q.3	**(a)**	Discuss following terms in brief: (i) Centum cell second (ii) Time consistent Busy Hour (iii) MTBF	**03**
	(b)	Compare Satellite and Terrestrial Communications	**04**
	(c)	Discuss Birth-death processes with respect to telephone traffic.	**07**
Q.4	**(a)**	Calculate the number of trunks that can be supported on a time multiplexed space switch, given that (1) 32 channels are multiplexed in each stream. (2) Control memory access time is 100 ns (3) Bus switching and transfer time is 100ns per transfer.	**03**
	(b)	Discuss role of following layer in OSI reference Model 1. Physical layer 2. Data Link Layer	**04**

	(c)	Discuss Inchannel signaling in brief and compare Inchannel vs Common channel Signalling	**07**

OR

Q.4	**(a)**	Compare circuit switching and packet switching network.	**03**
	(b)	Discuss Numbering Plan in Telephone Networks.	**04**
	(c)	Discuss Store and Forward Switching in detail.	**07**

Q.5	**(a)**	What is the role of Application Layer in OSI model.	**03**
	(b)	Discuss LAN topologies in brief.	**04**
	(c)	Explain Network layer in OSI Model in detail and discuss classification of routing algorithms.	**07**

OR

Q.5	**(a)**	Explain teletex service.	**03**
	(b)	List services supported by ISDN and explain audio and video conferencing and database access.	**04**
	(c)	Discuss network architecture of ISDN.	**07**

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