Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME SEMESTER II EXAMINATION – SUMMER 2017

Subject Code: 2720507 **Date:30/ 05 /2017**

Subject Name: Data Communication and Networking

Time:02:30 PM to 05:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain the need of sliding window protocol at data link layer. Prove that selective repeat will offer minimum channel overhead as compared to it's all other variants.	**07**
	(b)	Explain distance vector routing algorithm in detail.	**07**
Q.2	**(a)**	What is the Public Switched Telephone System? Also explain details of PSTN system	**07**
	(b)	What is framing? List all methods used for framing and explain any two methods used for framing in detail.	**07**
		OR	
	(b)	Explain security issues and challenges in wireless networks,	**07**
Q.3	**(a)**	What is Digital Signature? List the methods used for Digital Signature and explain them in detail.	**07**
	(b)	What is World Wide Web? Draw and Explain architectural overview of 07 2 the World Wide Web.	**07**
		OR	
Q.3	**(a)**	What is Domain Name System? Explain Recourse records and Name server for the Domain Name System	**07**
	(b)	What is cryptography? Explain Symmetric Key Algorithms in detail.	**07**
Q.4	**(a)**	List the various duties of the transport layer and explain each in brief. Compare UDP and TCP.	**07**
	(b)	Write a short note on 4G cellular system.	**07**
		OR	
Q.4	**(a)**	Draw IPV4 header format and explain the each field of the header. Also explain the concept of fragmentation in detail.	**07**
	(b)	Explain the Transport Service Primitives. Explain using diagram, connection establishment and release using these primitives.	**07**
Q.5	**(a)**	Explain the Bluetooth architecture and Bluetooth frame structure in brief.	**07**
	(b)	Explain the guided transmission media in detail.	**07**
		OR	
Q.5	**(a)**	What is the significance of Switching in Communications? Compare and Contrast Circuit Switching, Message Switching and Packet Switching giving example of usage of each switching technique.	**07**
	(b)	Explain in Detail with diagram, why it is required to define the maximum and minimum Frame size of Ethernet? What is Binary Exponential Backoff and why it is used in Ethernet?	**07**

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