Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII EXAMINATION – WINTER 2015

Subject Code:181101 **Date:07/11/2015**

Subject Name: Data Communication & Networks

Time: 2:30pm to 5:00pm **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 OSI reference model with the diagram. Also enlist its critique in various applications.	**07**
	(b)	Explain the importance of switching in communication networks? Also, provide comparative overview of the Circuit Switching, Message Switching and Packet Switching with suitable example.	**07**
Q.2	**(a)**	What is the Public Switched Telephone System? Also discussed in details working of PSTN system using diagram.	**07**
	(b)	Why the Sliding Window Protocol is required at Data Link Layer. Verify that "Selective Repeat performs better than all its other variants for minimum channel overhead criteria".	**07**
		OR	
	(b)	Explain in details the DSL technology.	**07**
Q.3	**(a)**	Prove the Sentence: "During contention period the collision is unavoidable fact in the CSMA/CD protocols". Enlist collision free protocols and explain anyone using neat diagram.	**07**
	(b)	What are the multiple access protocols used for the wireless network and Explain in detail any two of them.	**07**
		OR	
Q.3	**(a)**	Explain in detail the Bluetooth technology.	**07**
	(b)	What is channel allocation issue? Also explain the static and dynamic channel allocation scheme.	**07**
Q.4	**(a)**	Compare and contrast the static and dynamic routing with examples. Describe the link state routing algorithm in detail.	**07**
	(b)	Explain in detail the ARP and RARP in the network layer with diagram.	**07**
		OR	
Q.4	**(a)**	What are the elements of transport layer and explain each of them in concisely.	**07**
	(b)	Write a short note on services provided by the TCP at Transport layer.	**07**
Q.5	**(a)**	Explain the importance of VoIP? Give Comparative overview of H.323 and SIP for Voice over IP Applications.	**07**
	(b)	What is Domain Name System? Describe in details the Recourse records and Name server for the Domain Name System	**07**
		OR	
Q.5	**(a)**	Define cryptography? Explain symmetric key algorithms in detail.	**07**
	(b)	Define Digital Signature? What are the methods used for Digital Signature and explain them in detail.	**07**

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