Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER– IV EXAMINATION – WINTER 2015

Subject Code: 2640001 Date: 30-11-2015

Subject Name: Fundamentals of Networking (FON)

Time:10.30 a.m. To 01.00 p. m. 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)** Answer the following questions **07**

1. Write the name of transmission impairment.
2. Difference between bit rate and baud rate?
3. What is Tunneling?
4. What is piggybacking?
5. How guard bands are used in FDM.
6. What is multipath fading?
7. What is the need for MIME?

(b) What is OSI Model? Explain the functions and protocols and services of each layer? **07**

Q.2 **(a)** 1) Explain Byte Stuffing method in brief **04**

2) Discuss and Compare various types of computer networks. **03**

(b) 1) What is Electromagnetic Spectrum? Why it is important in data Communication? Describe the characteristics of Electromagnetic Spectrum for studying data communication? **04**

2) Differentiate between Circuit Switching and Packet Switching. **03**

OR

(b) 1) Briefly explain the need and application of ISM band in wireless communications **04**

2) Explain Propagation mode of Fiber Optic cable. **03**

Q.3 **(a)** 1) Explain Sliding window protocols are more robust. **04**

2) Explain DV and LS routing algorithms. **03**

(b) 1) What is jitter control? Why is it more useful in multimedia transmission? **04**

2) how does non-persistent CSMA differ from 1-persistent CSMA **03**

OR

Q.3 **(a)** 1) What is congestion? How is congestion controlled in virtual circuit Network? **04**

2) Compare Fast Ethernet with Gigabit Ethernet. **03**

(b) 1) Justify DCF and PCF can co-exist in a single cell while using 802.11. **04**

2) Compare GEO and LEO for communication needs. Provide two important Points. **03**

Q.4 **(a)** 1) List and explain the services provided by IEEE 802.11 standard. **04**

2) Write a note on: Binary Exponential Back-off Algorithm **03**

(b) 1) Explain the Go-Back-N and Selective reject ARQ technique with advantages and disadvantages. **04**

2) Explain AODV algorithm. **03**

OR

Q.4	**(a)**	1) Why was Manchester Encoding chosen for first version of Ethernet?	**04**
		2) Explain Connection-oriented and Connection-less services.	**03**
	(b)	1) Write the functions of application layer.	**04**
		2) Explain the fast recovery algorithms.	**03**
Q.5	**(a)**	1) Discuss the three-way handshake technique.	**04**
		2) Write the applications of computer network.	**03**
	(b)	1) Explain the architecture of WWW.	**04**
		2) Explain the duties of Physical Layer.	**03**

OR

Q.5	**(a)**	1) Write the duties of Transport layer.	**04**
		2) Explain the classification of network on the basis of scope.	**03**
	(b)	1) What is Bluetooth? Explain its architecture	**04**
		2) What is distributed database? Write its advantages.	**03**

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