Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER– IV • EXAMINATION – WINTER 2016

Subject Code : 640001 Date:20/10/ 2016

Subject Name: Fundamental of Networking

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.**

Q.1 **(a)** Answer the following questions.

1. Differentiate Connectionless Vs Connection Oriented Communication. **03**
2. What is window advertisement? **01**
3. What is congestion? Explain. **01**
4. Explain any two resource record types of DNS database. **02**

(b) 1. Write the difference between Radio Waves and Micro Waves. **03**

2. Write the difference between Fiber Optics and Satellite Communication **03**

3. Explain the term ‘baud rate’. **01**

Q.2 **(a)** 1. Write the difference between Repeater and Amplifier. **03**

2. Explain FDM & TDM. **03**

3. Explain the term ‘Hamming Distance’. **01**

(b) Explain the functionality of 1. Data link 2. Network and 3. Transport Layer of OSI layer in detail. **07**

OR

(b) On which principle of physics Fiber Optics works? Explain different types of FO in detail. Why LED is used majorly instead of LASER to transmit the data in FO? Explain. **07**

Q.3 **(a)** 1. Explain Hidden station and Exposed station problem along with their solutions. **04**

2. Explain Binary Exponential Back-off algorithm. **03**

(b) Explain Link state routing protocol in detail. **07**

OR

Q.3 **(a)** What is delayed duplicates problem? Explain Three-way handshake method to establish a connection. **07**

(b) Write the advantages of hierarchy of domain namespace. **07**

Q.4 **(a)** Explain IEEE 802.11frame structure in detail. **07**

(b) Generate hamming Code for 1100 100 data bits. **07**

OR

Q.4 **(a)** Explain distance vector routing detail. **07**

(b) Explain any four TCP timers in detail. **07**

Q.5 **(a)** 1. Explain the following.

a) Frame Bursting in Gigabit Ethernet **02**

b) Four service classes defined in IEEE 802.16 **04**

2. Explain the term : NAV **01**

(b) Explain iterative and recursive name resolution in DNS. **07**

OR

Q.5	**(a)**	1.	Explain (a) Admission Control and (b) Explicit Congestion Notification algorithm to manage the congestion in the network.	**06**
		2.	Explain the term : Attenuation	**01**
	(b)	1.	Explain Selective repeat protocol in detail.	**04**
		2.	Explain Phase Modulation in details. How Phase modulation is better than other modulation techniques? Explain with reason.	**03**

****