

PARUL UNIVERSITY
PARUL INSTITUTE OF COMPUTER APPLICATION
BCA DEPARTMENT
Mid Term Examination – October, 2016

Subject Code: 05101202/05301202
Subject Title: Data Communication and Computer Networks
Course: BCA / IMCA Semester: 3

Date: 19/10/16
Time: 10:30 to 12:30
Total Marks: 50

Q.1	Do as Directed (Attempt any 10 from 13)	[10]
	<ol style="list-style-type: none">1. The data link layer takes the packets from _____ and encapsulates them into frames for transmission. a) network layer b) physical layer c) transport layer d) application layer 2. Header of a frame generally contains a) addresses b) sequence number c) options a & b both d) none of the above 3. _____ can be expressed as degrees. a) Amplitude b) Frequency c) Phase d) Wavelength 4. Amount of Constellation points in _____ signal affects data rate. a) Analog b) Digital c) Both d) None of above 5. _____ supports data transmission of Digital and Analog signals. a) CAT-1 b) CAT-2 c) CAT-3 d) CAT-4 6. Radio Waves are _____. a) Unidirectional b) Bidirectional c) Omni-directional d) All of above 7. Physical Addressing is used by _____ layer. a) Data Link Layer b) Physical Layer	

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	<p>c) Network Layer d) Transport Layer</p> <p>8. The different types of services provided by data link layer is/are ... a) Unacknowledged connectionless service b) Acknowledged connectionless service c) Acknowledged connection oriented service d) All of the above.</p> <p>9. In we are looking only to see if any error has occurred. The answer is a simple yes or no. a) error searching b) error detection c) error correction d) error transmission</p> <p>10. Which one of the following routing algorithm can be used for network layer design? a) shortest path algorithm b) distance vector routing c) link state routing d) all of the mentioned</p> <p>11. The network layer protocol of internet is a) ethernet b) internet protocol c) hypertext transfer protocol d) none of the mentioned</p> <p>12. Which ARQ mechanism deals with the transmission of only damaged or lost frames despite the other multiple frames by increasing the efficiency & its utility in noisy channels? a) Go-Back-N ARQ b) Selective Repeat ARQ c) Stop-and-Wait ARQ d) All of the above</p> <p>13. Internet has chosen datagram approach to switching in the a) Data Link Layer b) Network Layer c) Switched Layer d) Linear Layer</p>	
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Q.2	Answer the following (1 line) (Attempt any 10 from 13)	[10]
	<ol style="list-style-type: none"> 1. What is framing? 2. Draw structure of frame. 3. What is error detection? 4. What is error correction? 5. Perform Byte stuffing: A B ESC FLG P R 6. What is router and routing table? 7. List out Broadcast routing algorithms. 8. What is multicasting? 9. What is flow based routing? 10. There is no indication of the signal level in Shannon Formula? (T/F) 11. List out Coaxial Standards. 12. Write any 3 applications of Smart Home Networks. 13. What is Network Architecture? 	
Q.3	Answer the following questions (Short) (Attempt any 5 from 8)	[15]
	<ol style="list-style-type: none"> 1. What are the uses of Computer Network? 2. We need to send 265 kbps over a noiseless channel with a bandwidth of 20 kHz. How many signal levels do we need? 3. Discuss: Effect of Noise on Parallel Lines and Twisted Lines of Twisted Pair. 4. Explain Hamming code with example. 5. Explain Stop & Wait protocol with example. 6. Explain the timer used in Go-back-N protocol. 7. What is count to infinity problem in Distance vector routing? 8. Calculate the highest bit rate of a regular telephone line with the bandwidth of 3000 Hz. The SNR is 3162. 	
Q.4	Answer the following questions (Long) (Attempt any 3 from 5)	[15]
	<ol style="list-style-type: none"> 1. Differentiate between Copper Wire and Fiber Optics. 2. Discuss: Effect of Noise on Parallel Lines and Twisted Lines of Twisted Pair. 3. Explain in brief selective repeat protocol. What is the benefit of using this protocol? 4. Draw the IPv4 header and explain all its fields. 5. Write short note on Link State routing. 	

*** All the Best***