NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA
MID - TERM EXAMINATION, Autumn-2018
B.Tech. 7th Semester

Subject code: CS-421 **Subject Name: Computer Networks** Dept. Code: **CS**
No. of pages: 01 **Full Marks: (3 X 10 =30)** Duration: 2 ***Hours***

Answer All Questions.

Q.No.	Particulars	Marks
1	How does the TCP/IP model differ from the OSI model? Mention the layer wise differences?	
2	How do you mean by the hidden terminal problem and the exposed terminal problem in wireless communication? With a neat timing diagram for the sender, receiver and their neighbours, discuss how these problems can be addressed?	
3	"The lower addressed terminals starve to get the channel for communication" Justify this with respect to a suitable MAC layer protocol?	
4	Discuss the maintenance strategies of the IEEE 802.4 protocol? Mention the frame format?	
5	How MACA protocol is improved by its variation MACAW protocol? How is it different from a CSMA protocol?	
6	With a neat diagram draw the frame structure of HDLC protocol? Discuss briefly about its fields.	
7	Calculate the total time required to transfer a 2GB file for following cases: Assume RTT=100ms, packet size of 2KB, and an initial RTT time of handshaking is done before the data is sent ; (i) The BW is 1Gbps and data packet can be sent continuously. (ii) The BW is 1Gbps, but after we finish sending each data packet we must wait half RTT before sending the next frame.	
8	Consider a point-to-point link of 2km length. At what BW would propagation delay (at a speed of 2 X 10^8 m/sec) be equal to transmission delay for (i) 100-byte packets and (ii) 512 byte packets?	
9	A user wants to fetch a 1MB file across 1.5Gbps network with RTT of 50ms. What is the transfer time?	
10	What do you mean by the sliding of window in the sliding window protocol? Write an algorithm for the maintenance of the window.	