班级：计算机 装 学号： 订 姓名： 线

哈尔滨理工大学

2019－2020 学年　第二学期考试试题　　A 卷

考试科目： 计算机网络　**考试时间：**100 分钟

试卷总分 100 分　　**班级：**计算机 18 级

题号	一	二	三	四	五	总分
得分						

1 (1) What is the instantaneous throughput? What is the average throughput? What does end-to-end throughput depend on?

(2) Suppose Host A wants to send a large file to Host B. The path from Host A to Host B has three links, of rates R_1=400kbps, R_2=2Mbps, R_3=1Mbps.

(a)Assuming no other traffic in the network, what is the throughput for the file transfer.

(b)Suppose the file is 4 million bytes. Roughly, how long will it take to transfer the file to Host B? （20 marks total）

2 (1) What is the difference between TCP and UDP?

(2) Suppose you wanted to do a transaction from a remote client to a server as fast as possible. Would you use UDP or TCP? Why? （10 marks total）

3 (1) What services can be offered by the Link Layer protocol?

(2) Suppose we want to transmit the message1011001 and protect it from errors using the CRC, the Polynomial generator is $P(x)= X^4+ X^3+1$.

(a)Use polynomial long division to determine the message that should be transmitted.

(b)Suppose the leftmost bit of the message is inverted due to noise on the transmission link. What is the result of the receiver's CRC calculation? How does the receiver know that an error has occurred? （30 marks total）

4 (1) Why the IP datagram need be fragmented?

(2) Suppose datagrams are limited to 1500 bytes (including header) between source Host A and destination Host B. Assuming a 20-byte IP header, how many datagrams would be required to send an MP3 consisting of 5 million bytes?（20 marks total）

5 (1) What services are provided by DNS?

(2) How does the DNS work? （20 marks total）

注意：除第 5 题必须用英文作答外，其它题目用中英文均可。