哈尔滨理工大学

2018－2019 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

考试班级： 计算机 17 级

题号	一	二	三	四	五	总分
得分						
评卷教师						

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第 1 大题和第 2 大题用英文答题，其他部分（第 3 大题、第 4 大题和第 5 大题）用中文答题。

1 Definition（Each definition worth 5 marks, 20 marks total）

Processing delay

Socket

Subnet

Filtering

2 Term Interpretation （Each definition worth 1 marks, 10marks total）

IP　CDMA　EDC　HTTP　TCP　POP　ARP　MAC　PPP　DNS

3Translation 翻译（Each translation worth 10 marks, 30 marks total）

(1) The Ethernet frame begins with an 8-byte preamble field. Each of the first 7 bytes of the preamble has a value of 10101010; the last byte is 10101011. The first 7 bytes of the preamble serve to “wake up” the receiving adapter and to synchronize their clocks to that of the sender's clock. The adapter A will not transmit the frame at exactly the target rate; there will always be some drift from the target rate, a drift which is not known a priori by the other adapters on the LAN.

(2) This field is used only when an IP datagram reached its final destination. The value of this field indicates the specific transport-layer protocol to which the data portion of this IP datagram should be passed. For example, a value of 6 indicates that the data portion is passed to TCP, while a value of 17 indicates that data is passed to UDP. Note that the protocol number in the IP datagram has a role that is analogous to the role of the port number field in the transport-layer segment.

(3) SMPT 是因特网电子邮件中主要的应用层协议。它使用 TCP 可靠数据传输服务，从发送方的邮件服务器向接收方的邮箱服务器发送邮件。像大多数应用层协议一样，SMTP 也有两个部分：运行在发送方邮件服务器的客户机端和运行在接收方邮件服务器的服务器端。每个邮件服务器上既有 SMTP 的客户机端运行也有 SMTP 的服务器端运行。

4 Short Answer Question 问答题(Each question worth 5marks, 20 marks total)

(1) What are the characteristics of CSMA/CD?.

(2) What is the difference between circuit switching and packet switching?

(3) 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?

(4) What is the difference between routing and forwarding?

5 Computation 计算题（the question worth 10 marks, 20 marks total）

(1) Suppose we want to transmit the message1011001 and protect it from errors using the CRC, the Polynomial generator is 11001.

(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?

(2) Consider a datagram network with 8-bit host addresses. Suppose a router uses longest prefix matching and has the following forwarding table:

Prefix Matching	**Interface**
00	0
010	1
011	2
10	2
11	3

For each of the four interfaces, give the associated range of destination host addresses and the number of addresses in the range.