座位号 专业 学院 学号 姓名 （密封线内不答题）

诚信应考,考试作弊将带来严重后果！

华南理工大学期末考试

《Computer Networks》试卷 B

注意事项：1. 考前请将密封线内填写清楚；

2. 所有答案请直接答在试卷上；

3. 考试形式：闭卷；

4. 本试卷共 五 大题，满分 100 分， 考试时间 120 分钟。

题 号	一	二	三	四	五	总分
得 分						
评卷人						

I、 Fill the blank(14 Points，1 Point/Blank)

1. The MAC Address of a host is 00-01-4A-83-72-1C, and its EUI-64 address is _____.(2 Points)
2. In order to reduce collision, Ethernet adopts _____ _____media access control (MAC) technology.
3. Category 5 UTP can transmit data to _____ meters away.
4. The work principle of Bridge is _____ _____ (2 Points)
5. List three video format you known_____,_____ _____.(2 Points)
6. World Wide Web (WWW) is composed of _____, _____,_____.(2 Points)
7. List three kind of dynamic assignment method of IP address: _____ _____,_____,_____.(3 Points)
8. IPv6 packet header has a field which is IPv4 packet header has not, the field is _____.

II、 Decide true or false(10 Points，1 Point/subject，true √，false×)

No.	1	2	3	4	5	6	7	8	9	10
Answer										

1. In OSI reference model, the top layer is physical layer.
2. The basic unit of bandwidth is bps, and the basic unit of throughput is Mbps.
3. In IPv4 address 193.168.125.0/30, Meaning of 30 is host bits number.
4. In TCP segment header, window size is decided by sender.
5. CHAP authentication in PPP is more secure than PAP authentication.

6. DNS is a hierarchical, domain-based naming scheme and a distributed database system for implementing this naming scheme.
7. BGP is a distance vector routing protocol, but it has no routing-loop problem.
8. The field number of basic header of IPv6 packet is much more than that of IPv4 packet header.
9. Light through fiber has no attenuation(衰减), so data can be transmitted far away.
10. Go-back-n is less effective than selective-repeat in channel utilization.

III、Make a choice(26 Points，2 Points/subject)

No.	1	2	3	4	5	6	7	8	9	10
Answer										
No.	11	12	13							
Answer										

1. Generally, PSTN (public switched telephone network) is made up of:_____
A. Local loop, toll connecting trunk, and intertoll trunk
B. Telephone, and central office
C. Local loop, end office, and central office
D. Telephone, end office, and trunks

2._____forms the heart of the modern telephone system, all time intervals within the telephone system are multiples of_____ μ sec
A. Codec/4000
B. PCM/4000
C. PCM/8000
D. PCM/125

3. Which is correct about RFCs (Request For Comments)?____
A. Are internet standards
B. Are technical reports which is stored on-line and can be fetched by anyone
C. Are proposed standards
D. Just are standard drafts

4. The metric of RIP (routing information protocol) is_____
A. Hop
B. Bandwidth
C. Load
D. Delay

5. Which device would result in extension of collision domain?_____
A. Router
B. Hub
C. Bridge
D. Switch

6. Which IP address can be used to locally broadcast? _____

A. 127.255.255.255

B. 255.255.255.255

C. 164.0.0.0

D. 127.0.0.0

7. Which is the default subnet mask of D class ? _____

A. 255.0.0.0

B. 255.255.0.0

C. 255.255.255.0

D. None

8. Which is legal IP address? _____

A. 1.255.255.2

B. 127.2.3.5

C. 225.23.200.9

D. 192.240.150.255

9. Which is not a legal IP address if subnet mask is 255.255.240.0? _____

A. 143.49.37.2

B. 143. 49.16.2

C. 143. 49.8.12

D. 143. 49.49.15

10. The metric of OSPF is _____

A. Hop

B. Bandwidth

C. Load

D. Delay

11. Main function of router is _____

A. Path selecting

B. Forwarding

C. Proxy ARP

D. A 和 B

12. Which transmission media is anti electromagnetism interference? _____

A. fiber optic

B. coaxial cable

C. Shielded Twisted Pair

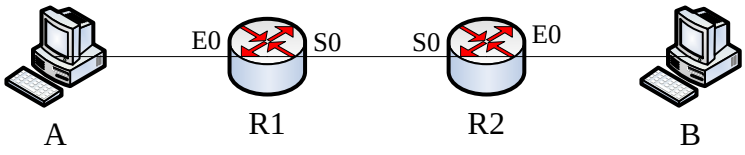
D. Unshielded Twisted Pair

13. Which are protocols of Network layer? _____

A. IP、TCP 和 UDP
B. ARP、IP 和 UDP
C. FTP、TELNET 和 SMTP
D. IP、ARP 和 ICMP

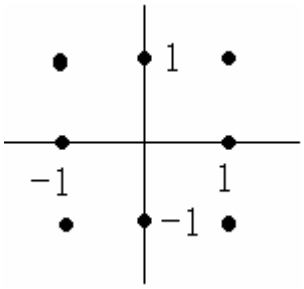
IV、Answer the following questions simply（30 Points，6 Points/subject）

1.In following figure, Host A want to send information to host B, But they have not communicate with each other before, please describe the whole procedure of transmission(include main technology), from encapsulation to de-capsulation.



2. A modem constellation diagram is as following, and it has data points at the following coordinates: （1，0），（1，1），（0，1），（-1，1），（-1，0），（-1，-1），（0，-1），and（1，-1）,How many bps can a modem with these parameters achieve at 1200 baud? If it has only （0，1）and （0，2）data point, then is this amplitude modulation or frequency modulation, why?

Solution:



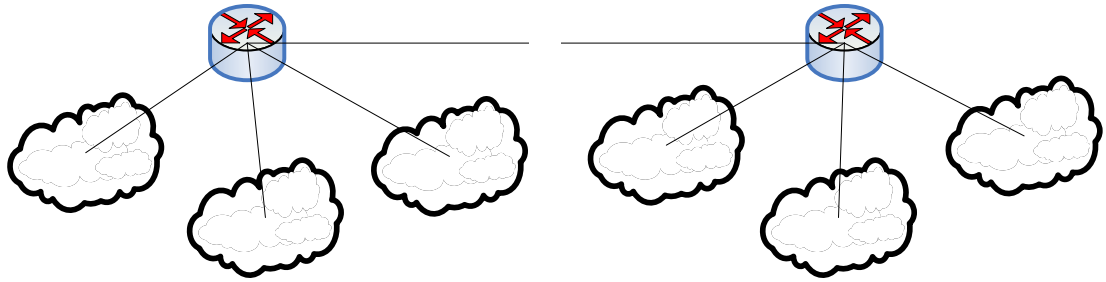
3. In a CDMA system, the chip sequence of A,B,C and D is （00011011），（00101110），（01011100）and（01000010）respectively，please write bipolar chip sequences of four stations; When a CDMA receiver gets the following chips: (-1 +1 -3 +1 -1 -3 +1 +1). Which stations transmitted, and which bits did each one send?
Solution:

4. An 8-bit byte with binary value 10101111 is to be encoded using an odd-parity Hamming code. What is the binary value after encoding?
Solution:

5. The maximum payload of a TCP segment is 65,495 bytes. Why was such a strange number chosen?

V、 Analysis（20 Points）

A company has two branches, A and B. A has 3 subnets whose PC quantity is 15, 25, and 30 respectively, and B has 3 subnets whose PC quantity is 10, 20, and 30 respectively. Now the company has two routers and a C class IP address 222.17.46.0, the topology is as following:



1. Please make a reasonable subnetting plan; and fill in the blank; Assign IP address to each interface of routers using your subnetting result.(8 Points)

Solution:

R1

S0

Line R1-

56l

E0

E2

E1

Subnet 1

15 PCs

Subnet 3

30 PCs

No. of subnet	Subnet mask	Address range	Broadcast address	Network address	Is usable?
No.1					
No.2					
No.3					
No.4					
No.5					
No.6					
……					

2. Configure the two router with static routing, and let two routers can ping successfully each other. (5 Points)

3. If two routers use OSPF, how much is cost of the line R1-R2? Please describe the procedure of establish R1-R2 full adjacency relationship? (7 Points)