

2020 年软件学院计算机网络期末试题(A)

考试方式: 闭卷 考试日期 2020 年 8 月 20 日 教师 刘峰
 系 (专业) 软件学院软件工程 年级 2018 级 班级 _____
 学号 _____ 姓名 _____ 成绩 _____

1	2	3	4	5	6	7	8	9	SUM

Note: Answers to Question one and two MUST be written DIRECTLY ON THE PAGES. Answers in other places are INVALID and will NOT be scored.

1. Single selection (15 marks)

(1) In following transmission media, which of them cannot be affected by electromagnetic or noise?

- A. Twisted pair B. Communication satellite C. Coaxial cable D. Fiber

(2) what is the bandwidth of an ISDN BRI-B Channel?

- A. 16Kbps B. 64Kbps C. 128Kbps D. 144Kbps E. 256Kbps

(3) The network layer protocol in the TCP/IP model provides?

- A. Connectionless and unreliable packet service
 B. Connectionless and reliable packet service
 C. Connection-oriented and unreliable packet service
 D. Connection-oriented and reliable packet service

(4) When data is encapsulated, which is the correct order?

- A. Data, frame, packet, segment, bit
 B. Segment, data, packet, frame, bit
 C. Data, segment, packet, frame, bit
 D. Data, segment, frame, packet, bit

(5) Which of the following about TCP (Transmission Control Protocol) is correct?

- A. Assume a sender's initial sequence number is S, then the sequence number acknowledged by the receiver is no less than S+2 before the connection close.
 B. Data sent by TCP is ordered, and all data must be sent sequentially.
 C. After the sequence: FIN (A to B), FIN (B to A), ACK (B to A) and ACK (A to B). The TCP socket address on A side could be recycled for other application.
 D. From the establishing to the closing of a TCP connection, at least 7 packets must be transmitted.

(6) The following protocol that does not belong to the network layer is ?

- A. ICMP B. IGMP C. ARP D. DHCP

(7) What flavor of Network Address Translation can be used to have one IP address allow many users to connect to the global Internet?

- A. NAT
 - B. Static
 - C. Dynamic
 - D. PAT
- (8) You need to create an access list that will prevent hosts in the network range of 192.168.160.0 to 192.168.191.0. Which of the following lists will you use?
- A. access-list 10 deny 192.168.160.0 255.255.224.0
 - B. access-list 10 deny 192.168.160.0 0.0.191.255
 - C. access-list 10 deny 192.168.160.0 0.0.31.255
 - D. access-list 10 deny 192.168.0.0 0.0.31.255
- (9) What constitutes a socket?
- A. IP address and MAC address
 - B. IP address and port number
 - C. MAC address and port number
 - D. Only the port number
- (10) The broadcast address of the network 155.25.0.0/20 is ?
- | | |
|-----------------|------------------|
| A.155.25.0.255 | B.155.25.255.128 |
| C.155.25.15.255 | D.155.25.255.255 |
- (11) Which device can't isolate the departmental collision domains?
- A. Hub
 - B. switch
 - C. router
 - D. A and B
- (12) Which of the following is not one of the advantages of using static routes over dynamic routing?
- A. Fast convergence
 - B. No CPU usage
 - C. No bandwidth usage
 - D. Security
- (13) Why will a switch never learn a broadcast address?
- A. Broadcasts only use network layer addressing.
 - B. A broadcast frame is never forwarded by a switch.
 - C. A broadcast address will never be the source address of a frame.
 - D. Broadcast addresses use an incorrect format for the switching table.
 - E. Broadcast frames are never sent to switches.
- (14) Refe Julie's IP address is 192.168.1.21 255.255.255.240. Joost's IP is 192.168.1.14/28. Their computers are connected together using a crossover Ethernet cable. Why can't they

ping each other?

- A. The subnet masks are different
- B. They can. This is another trick question.
- C. Because they are in different subnets.
- D. Because the router does not support subnetting.
- E. Because it should be a straight-through cable.

(15) The topology with highest reliability is

- A. bus topology
- B. star topology
- C. ring topology
- D. mesh topology

2. Multi-selections(16marks)

(1) Which following statements are true?

- A. MAC address is a 48-bit digit.
- B. Ethernet Switches use MAC addresses to filter the traffic
- C. IP addresses can be found in the header of an Ethernet frame
- D. Port numbers can be found in both headers of TCP segments and UDP segments.

(2) Which statement about switches and routers are true?

- A. Routers can prevent the broadcasts from one interface to another.
- B. Switches can prevent the broadcasts from one interface to another without using VLAN.
- C. Routers can isolate the collision.
- D. Switches can isolate the collision without using VLAN.
- E. Routers can't provide routing between different VLANs.

(3) Choose the true statement about the command

“ip route 172.16.3.0 255.255.255.0 192.168.2.4”

- A. It establishes a static route to the 172.16.3.0 network
- B. It establishes a static route to the 192.168.2.0
- C. It configures the router to send any traffic for an unknown destination to the 172.16.3.0 network
- D. It configures the router to send any traffic for an unknown destination out the interface with the address 192.168.2.4
- E. It uses the default administrative distance
- F. It is a route that would be used last if other routes to the same destination exist

(4) At which two layers of the OSI model do WANs operate?

- A. application layer
- B. session layer
- C. transport layer
- D. network layer
- E. datalink layer
- F. physical layer

- (5) Which of the following services use TCP?
- A. DHCP
 - B. SMTP
 - C. HTTP
 - D. TFTP
 - E. FTP
- (6) Which of the following are true regarding the distance-vector and link-state routing protocols?
- A. Link state sends its complete routing table out all active interfaces on periodic time intervals.
 - B. Distance vector sends its complete routing table out all active interfaces on periodic time intervals.
 - C. Link state sends updates containing the state of its own links to all routers in the internetwork.
 - D. Distance vector sends updates containing the state of its own links to all routers in the internetwork.
- (7) Find out INVALID IP addresses.
- A. 131.107.256.80
 - B. 231.222.0.11
 - C. 202.117.34.32
 - D. 198.121.254.255
- (8) Which statements about ACL are true?
- A. If no ACL found, all traffics are permitted
 - B. If we apply “access-list 1 deny host 192.168.10.1” at “in” direction of the interface S1(configured with the subnet mask 255.255.255.0), then all traffics from the subnet 192.168.10.0/24 at “in” direction will not be permitted.
 - C. If we apply “access-list 1 deny host 192.168.10.1” at “in” direction of the interface S1(configured with the subnet mask 255.255.255.0), then all traffics from the subnet 192.168.10.0/24 at “in” direction will be permitted, except traffics from 192.168.10.1.
 - D. If ACL list number is 50, then it should be put near to the destination
 - E. If ACL list number is 1, then it should be put near to the source

3. Interpret these terms **IN DETAIL**: (24 marks)

- (1) PPP

(2) RARP

(3) ICMP

(4) HTML

(5) CSMA/CA

(6) CIDR

(7) CHAP

(8) ISP

4. Assume that routing table of the network router B is as follows

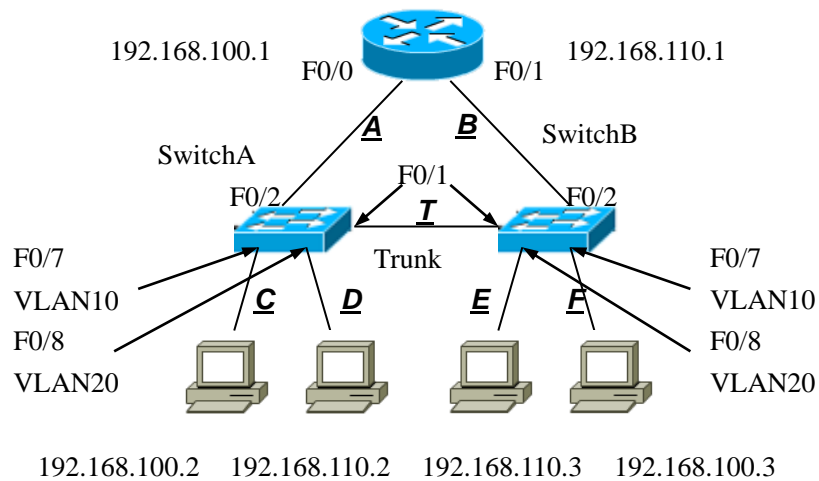
Destination network	Distance vector	Next routing
N1	10	A
N2	4	A
N6	8	F
N8	5	E
N9	3	F

Now router B receives routing information from router C as following:

Destination network	Distance vector
N2	4
N3	3
N6	6
N8	6
N9	2

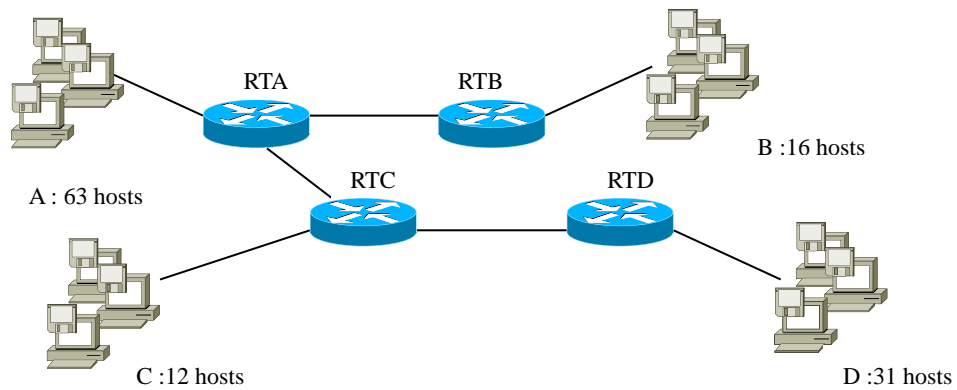
Write out the routing table of router B after updating with RIP. (7 marks)

- 5 · Please give the order of links the packets passed when ping 192.168.100.3 from 192.168.110.2, and why? (6 marks). These links are labeled as 'A', 'B', and so on



6. Briefly describe the process of displaying the home page after entering the url address in the browser for the first time. (8 marks)

7. In the topology of a corporation (Illustrated in figure). If you want to distribute 192.168.20.0/24 to these hosts and routers, and divide the network into subnets, please give the result (zero subnet permitted). (10 marks)



8. Given the information is “001101101010”, please draw the waveforms of "non return to zero" code, Manchester code and differential Manchester code. (6 marks)

9. Given that the hexadecimal number of UDP header is 06 32 00 35 00 1C E2 17. Answer the following questions. (8 marks)

- (1) The source port number and the destination port number?
- (2) The length of the user datagram ?
- (3) Is the message sent by a client or a server?
- (4) Which kind of network service does the message involve?