

Part I. 單選題 (每題 2%, 請在答案卡上作答)

1. Which of the following is not a multimedia network service?
(A) YouTube (B) Google Hangout (C) Skype (D) DNS (E) KKBox
2. Which of the following is not a scheduling policy at a packet queue?
(A) First In First Out (B) Drop Tail (C) Priority Queue (D) Round Robin (E) Weighted Fair Queuing
3. What is the reason contributing to the delay losses in a multimedia streaming service?
(A) Buffer overflow (B) Lack of memory space (C) Decrease of end-to-end network delay (D) Increase of interacting network traffic (E) Media player core dump
4. Which of the following does not enhance the QoS of multimedia services?
(A) Retransmit lost packets (B) Reserve bandwidth ahead of transmission (C) Give multimedia packets priority (D) Add network bandwidth (E) Move the server closer to the users
5. Which of the following is not a wireless medium?
(A) Bluetooth (B) WiFi (C) Ethernet (D) Aloha (E) Zigbee
6. Which of the following does not use a random access MAC protocol?
(A) Bluetooth (B) WiFi (C) Ethernet (D) Aloha (E) Zigbee
7. Which of the following uses a random access MAC protocol?
(A) FDDI (B) UMTS (C) 3G (D) GSM (E) WiFi
8. Which of the following uses a turn taking MAC protocol?
(A) FDDI (B) UMTS (C) 3G (D) GSM (E) WiFi
9. Which of the following is not a MAC protocol used in a wireless medium?
(A) TDMA (B) FDMA (C) CSMA/CA (D) CSMA/CD (E) CSMA
10. Which of the following is not a MAC protocol used in a wired medium?
(A) TDMA (B) FDMA (C) CSMA/CA (D) CSMA/CD (E) CSMA
11. Which of the following is not a step in the operation of ARP?
(A) Unicast an ARP request (B) Unicast an ARP reply (C) Cache an ARP-IP mapping (D) Timeout an ARP-IP mapping (E) Broadcast an ARP request
12. How long is the Ethernet's MAC address?
(A) 16 bits (B) 24 bits (C) 32 bits (D) 40 bits (E) 48 bits
13. How long is the IPv4 address?
(A) 16 bits (B) 24 bits (C) 32 bits (D) 40 bits (E) 48 bits
14. How long is the IPv6 address?
(A) 32 bits (B) 64 bits (C) 96 bits (D) 128 bits (E) 160 bits
15. Which of the following principle RIP uses to determine routes?
(A) Distance Vector Routing (B) Link State Routing (C) Hierarchical Routing (D) Reverse Path Forwarding (E) Center Based Tree
16. Which of the following principle OSPF uses to determine routes?
(A) Distance Vector Routing (B) Link State Routing (C) Hierarchical Routing (D) Reverse Path Forwarding (E) Center Based Tree
17. Which of the following principle BGP uses to determine routes?
(A) Distance Vector Routing (B) Link State Routing (C) Hierarchical Routing (D) Reverse Path Forwarding (E) Center Based Tree
18. Which of the following principle DVMRP uses to determine routes?
(A) Distance Vector Routing (B) Link State Routing (C) Hierarchical Routing (D) Reverse Path Forwarding (E) Center Based Tree

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19. Which of the following principle PIM-SM uses to determine routes?
(A) Distance Vector Routing (B) Link State Routing (C) Hierarchical Routing (D) Reverse Path Forwarding (E) Center Based Tree
20. Suppose a TCP connection is in the slow start state and the current window size is $cwnd$. What is the new window size when the sender receives an acknowledgement packet?
(A) $cwnd+1$ (B) $2cwnd$ (C) 1 (D) $cwnd+1/cwnd$ (E) $cwnd/2$
21. Suppose a TCP connection is in the congestion avoidance state and the current window size is $cwnd$. What is the new window size when the sender receives an acknowledgement packet?
(A) $cwnd+1$ (B) $2cwnd$ (C) 1 (D) $cwnd+1/cwnd$ (E) $cwnd/2$
22. Suppose the current window size of TCP is $cwnd$. What is the new window size when the TIMEOUT timer expires?
(A) $cwnd+1$ (B) $2cwnd$ (C) 1 (D) $cwnd+1/cwnd$ (E) $cwnd/2$
23. Suppose the current window size of TCP is $cwnd$. What is the new window size when the 3 duplicate acknowledgement packets are received?
(A) $cwnd+1$ (B) $2cwnd$ (C) 1 (D) $cwnd+1/cwnd$ (E) $cwnd/2$
24. Which of the following is used to refer to a packet at the application layer?
(A) Datagram (B) Frame (C) Segment (D) Cell (E) Message
25. Which of the following is used to refer to a packet at the transport layer?
(A) Datagram (B) Frame (C) Segment (D) Cell (E) Message
26. Which of the following is used to refer to a packet at the network layer?
(A) Datagram (B) Frame (C) Segment (D) Cell (E) Message
27. Which of the following is used to refer to a packet at the link layer?
(A) Datagram (B) Frame (C) Segment (D) Cell (E) Message
28. Which of the application layer protocols support delivery of Web pages?
(A) DNS (B) SMTP (C) FTP (D) Telnet (E) HTTP
29. Which of the application layer protocols support delivery of emails?
(A) DNS (B) SMTP (C) FTP (D) Telnet (E) HTTP
30. Which of the application layer protocols support delivery of hostname to IP address mappings?
(A) DNS (B) SMTP (C) FTP (D) Telnet (E) HTTP

Part II. 複選題 (每題 4%, 請在答案卡上作答)

31. Which of the following are the properties of a circuit switched network?
(A) dedicated (B) idle resource (C) contention (D) loss (E) call setup
32. Which of the following are the properties of a packet switched network?
(A) dedicated (B) idle resource (C) contention (D) loss (E) call setup
33. Which of the following Unix system calls are implemented using ICMP?
(A) ps (B) traceroute (C) cat (D) ping (E) ifconfig
34. Which of the following messages are sent using UDP packets?
(A) DNS Query (B) BGP Advertisement (C) RIP Advertisement (D) OSPF Advertisement (E) HTTP Reply
35. Which of the following messages are sent using TCP packets?
(A) DNS Query (B) BGP Advertisement (C) RIP Advertisement (D) OSPF Advertisement (E) HTTP Reply

36. Consider a TCP connections with the cwnd recorded after every round trip time as: 1, 2, 4, 8, 9, 10. What are the possible cwnd values coming next round?
(A) 11 (B) 20 (C) 1 (D) 2 (E) 5
37. Which of the following protocols use Dijkstra algorithm to compute routes?
(A) RIP (B) OSPF (C) BGP (D) MOSPF (E) DVMRP
38. Which of the following codes allow errors correction in a data transfer?
(A) CRC (B) Internet checksum (C) CDMA (D) Two Dimensional Parity (E) Hamming Code
39. Which of the following help reducing delay losses for stored media streaming?
(A) Allocate a larger client side buffer (B) Set a longer playout delay (C) Move the server closer to the client (D) Send the stream in priority (E) Use a forward error correction code
40. There are two ways to recover from losses in general – retransmission and forward error correction. Which of the following network services are more suitable using forward error correction?
(A) File Transfer (B) Online Shooting Game (C) Email (D) Video Conference (E) Internet Telephone

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