

COMP-8677 Mid-term Makeup

Time: 40min (plus 10min for submission; no late submission allowed)

IMPORTANT: 1. this paper is for makeup; 2. Write answers on the **answer sheet**; 3. Submit your answer sheet to blackboard; 4. No cheating is allowed; otherwise, you will receive 0

1. TCP is a _____ protocol

- A. Application Layer
- B. Transport Layer
- C. Network Layer
- D. Link Layer

2. UDP demultiplexing is based on _____

- A. source port
- B. destination port
- C. destination IP and destination port
- D. source port, destination port, source IP and destination IP

3. Which one of the following is not a function of network layer?

- A. routing
- B. packet forwarding
- C. packet fragmentation
- D. error correction

4. In the internet protocol stack, when the message moves from the application layer to the link layer, headers are _____

- A. Added
- B. Removed
- C. Rearranged
- D. Modified

5. Which of the following location can not provide you a wired access network?

- A. At home
- B. At University
- C. In your car
- D. In your office

6. How many IPv4 addresses are there in a subnet 10.0.2.0/24?

- A. 128
- B. 8
- C. 64
- D. 256

7. Which field in a TCP segment will be used for flow control purpose?

- A. checksum
- B. sequence number
- C. acknowledgement number
- D. receive window

8. which of the following is a basic function of network-layer?

- A. flow control
- B. error-recovery
- C. routing
- D. multiplexing/demultiplexing

9. Suppose a TCP connection is transferring a file of 1000 bytes. The first byte is numbered 10001.

What is the sequence number of the segment if all data is sent in only one segment?

- A. 10000
- B. 10001
- C. 12001
- D. 11001

10. Following a timeout at a TCP sender, what is most likely to happen?_

- A. retransmit a packet that causes the timeout
- B. close the TCP connection
- C. do nothing
- D. send a brand new packet

11. which of the following flag bits indicates a SYN packet (where only means other flag bits are 0)?

- A. only flag bits A=1 and S=1
- B. only flag bit S=1
- C. only flag bit F=1
- D. only flag bit R=1

12. UDP can provide the following services:

- A. Routing and switching
- B. Flow control
- C. Congestion control
- D. Demultiplexing and error detection

13. If a SYN packet has a sequence number 123, what is the sequence number of ACK packet by the SAME sender (which is generated after receiving the SYN-ACK packet from the receiver)?

- A. 123
- B. 124
- C. 125
- D. unknown

14. The _____ field in a UDP header is used to detect errors over the entire user datagram.

- A. udp header
- B. checksum
- C. source port
- D. destination port

15. Transmission control protocol is

- A. uses a three-way handshake to establish a connection
- B. receive data from application as a single stream
- C. connection oriented protocol
- D. all of the mentioned

16. The sizes of source and destination port address in TCP header are _____ respectively.

- A. 16-bits and 32-bits
- B. 16-bits and 16-bits
- C. 32-bits and 16-bits
- D. 32-bits and 32-bits

17. Consider a forwarding table at a router:

Destination IP Address Range	link interface

11001000 00010111 00010*** *****	0
11001000 00010111 00011000 *****	1
11001000 00010111 00011*** *****	2
otherwise	3

Given an input packet with a destination IP address 11001000 00010111 00011000 10101010,
what is link interface the router will forward the packet to?

- A. 0
- B. 1
- C. 2
- D. 3

18. The number of objects in a Web page which consists of 4 jpeg images and HTML text is _____

- A. 4
- B. 1
- C. 5
- D. 7

19. Which of the following system calls results in the sending of SYN packets?

- A. socket
- B. bind
- C. listen
- D. connect

20. A _____ is a device that forwards packets between networks by processing the routing information included in the packet.

- A. bridge
- B. firewall
- C. router
- D. hub

21. When you type URL `www.someschool.edu/someDept/pic.gif` on your browser, your browser will generate a HTTP request message.

Which of the following about this request message is false?

- A. It could have a headerline of `Host: www.someschool.edu\r\n`
- B. It could have a requestline of `POST /someDept/pic.gif HTTP/1.1\r\n`
- C. It could have a headerline of `User-Agent: Firefox/3.6.10\r\n`
- D. It could have a headerline of `Keep-Alive: 115\r\n`

22. The first line of HTTP request message is called _____

- A. Request line
- B. Header line
- C. Status line
- D. Entity line

23. TCP process may not write and read data at the same speed. So we need _____ for storage.

- A. Packets
- B. Buffers
- C. Segments
- D. Stacks

24. NAT stands for _____

- A. network address transmission
- B. network attack training
- C. network address translation
- D. new address transformation

25. which of the following can be an internet host?

- A. smart phone
- B. PC
- C. wireless laptop
- D. any of the above

26. Network congestion occurs _____

- A. in case of traffic overloading
- B. when a system terminates
- C. when connection between two nodes terminates
- D. in case of transfer failure

27. a link layer packet is called a _____

- A. segment
- B. datagram
- C. frame
- D. IP datagram

28. The data link layer takes the packets from _____ and encapsulates them into frames for transmission.

- A. physical layer
- B. transport layer
- C. network layer
- D. application layer

29. Which of the following is not the reliability service provided by TCP

- A. congestion control
- B. flow control
- C. error detection
- D. bandwidth guarantee

30. Transmission control protocol (TCP) _____

- A. is a connection-oriented protocol
- B. uses a three-way handshake to establish a connection
- C. receives data from application as a single stream
- D. all of the mentioned