分组1

1. In the following four options, which one is not the part of cookie technology?(1.0分)

- A.Cookie header lines in the HTTP response message and request message.
- B.One cookie header file kept on the user's end system and managed by the user's browser.
- √ C.A network entity that satisfies HTTP requests on the behalf of an origin Web server.
- D.A back-end database at the Web site

2. In HTTP response message, if the Date: header ;one indicates the time Fri. 08 Aug. 2008 12:00:00 GMT, the Last-Modified: header line can not be(1.0分)

- A.Fri. 08 Aug. 2008 11:00:00 GMT
- B.Fri. 08 Aug. 2008 11:30:00 GMT
- C.Fri. 08 Aug. 2008 10:00:00 GMT
- √ D.Fri. 08 Aug. 2008 12:30:00 GMT

3. If the header line Connection is close, it means that the client wants()(1.0分)

- A.persistent connection with pipelining
- B.persistent connection without pipelining
- C.nonpersistent connection
- √ D.not connection

4. There are three classes of DNS servers, there are ()(1.0分)

- A.root DNS server, top-level domain DNS server and local DNS server
- √ B.root DNS server, top-level domain DNS server and authoritative DNS server
- C.root DNS server, local DNS server and authoritative DNS server
- D.root DNS server, local DNS server and top-level domain DNS server

5. In the following four options about web cache, which one is not correct? (1.0分)

- A.A web cache is both a server and a client at the same time.
- B.A web cache is purchased and installed by an ISP.
- √ C.A web cache can raise the response time for a client request.
- D.A web cache can reduce traffic on an institution's access link to the Internet.

6. The default mode of HTTP uses()(1.0分)

- A.non-persistent connection with pipelining
- √ B.non-persistent connection without pipelining
- C.persistent connection with pipelining
- D.persistent connection without pipelining

7. () takes for a small packet to travel from client to server and then back to the client.(1.0分)

- A.RDT
- B.threshold
- √ C.RTT
- D.overhead

8. A process sends messages into, and receives messages from, the network through its .(1.0分)

- √ A.socket
- B.program
- C.client
- D.peer

9. Suppose A (with a Web-based e-mail account) sends a message to B (who accesses his mail server using POP3), which application-layer protocol is not used? (1.0分)

- A.HTTP
- √ B.SMTP
- C.POP3
- D.IMAP

10. The time it takes for a small packet to travel from client to server and then back to the client is .(1.0分)

- A.round-travel time
- B.next-hop time
- √ C.round-trip time
- D.prefix-matching time

11. In the following protocol, which one is stateless? (1.0分)

- √ A.HTTP
- B.SMTP

C.FTP

D.IMAP

12. The Internet mail system has three components which they are .(1.0分)

A.user agent, SMTP, POP3

B.SMTP, POP3, IMAP

C.user agent, SMTP, IMAP

√ D.user agent, SMTP, mail server

13. n the following descriptions about FTP, which one is correct?(1.0分)

A.FTP is p2p architecture.

√ B.FTP sends its control information out-of-band.

C.FTP uses persistent connection.

D.FTP is a stateless protocol.

14. FTP uses two parallel TCP connections to transfer a file, there are .(1.0分)

√ A.control connection and data connection

B.receiving connection and sending connection

C.client connection and sever connection

D.program connection and process connection

15. Suppose a web page consists of a base HTML file, 5 JEPG images and a java applet, and also suppose HTTP uses persistent connection without pipelining, the total response time is .(1.0分)

√ A.2RTT

B.8RTT

C.12RTT

D.14RTT

16. In the following descriptions about HTTP, which one is not correct? (1.0分)

√ A.HTTP uses non-persistent connections in its default mode.

B.HTTP uses TCP as its underlying transport protocol.

C.HTTP is a stateless protocol.

D.HTTP is client-server architecture.

17. In the following applications, which one uses UDP? (1.0分)

A.E-mail

B.web application

C.file transfer

√ D.DNS

18. In the following applications, which one is a loss-tolerant application? (1.0分)

A.E-mail

B.file transfer

C.instant messaging

√ D.real-time audio

19. The Internet's connectionless service is called ( ).(1.0分)

A.TCP

√ B.UDP

C.TCP/IP

D.IP

20. The Internet's connection-oriented service has a name, it is ( ).(1.0分)

√ A.TCP

B.UDP

C.TCP/IP

D.IP

21. An application can rely on the connection to deliver all its data without error and in the proper order. The sentence describes ( ).(1.0分)

A.flow control

B.congestion-control

√ C.reliable data transfer

D.connection-oriented service

22. HTTP response messages never have an empty message body.(2.0分)

A.正确

√ ◉ B.错误

23. FTP sends control information out of band (2.0分)

√ ◉ A.正确

○ B.错误

24. The Date: header in the HTTP response message indicates when the object in the response was last modified.(2.0分)

√ ○ A.正确

◉ B.错误

25. With nonpersistent connection between browser and origin server, it is possible for a single TCP segment to carry two distinct HTTP request messages. (2.0分)

○ A.正确

√ ◉ B.错误

26. A user requests a Web page that consists of some text and three images. For this page, the client will send one request message and receive four response messages.(2.0分)

○ A.正确

√ ◉ B.错误

27. What information is used by a process running on one host to identify a process running on another host?(7.0分)

目的地主机的IP地址和目的地套接字的端口号。

得分:7.0

查看评语

参考答案

收起

28. For a P2P file-sharing application, do you agree with the statement, "There is no notion of client and server sides of a communication session"? Why or why not?(7.0分)

我不同意。所有的通信会话都有一个客户端和一个服务器。在P2P的文件共享系统中，一般来说，发送文件的一方是服务器，接受文件的一方是客户端。

得分:7.0

查看评语

参考答案

收起

29. Suppose Alice, with a Web-based e-mail account (such as Hotmail or gmail), sends a message to Bob, who accesses his mail from his mail server using POP3. Discuss how the message gets from Alice's host to Bob's host. Be sure to list the series of application-layer protocols that are used to move the message between the two hosts.(7.0分)

消息通过HTTP协议从Alice的主机发送到她的邮件服务器中。之后，Alice的邮件服务器通过SMTP协议发送消息到Bob的邮件服务器中。然后Bob通过POP3协议从他的邮件服务器中得到邮件。

得分:6.0

查看评语

参考答案

收起

30. Suppose you open a startup company "starwar" and want to set up your company network. Your network has the following servers: [1]. DNS server: "dns1.starwar.com.cn" with IP as "128.119.12.40" [2]. Web server: "www.starwar.com.cn" with two IP as "128.119.12.55" and "128.119.12.56". [3]. Email server: "galaxy.starwar.com.cn" with IP as "128.119.12.60" [4]. Your company's email address is "username@starwar.com.cn". (1)What resource records (RRs) do you need to provide to the upper-level name server? (2). What RRs do you need to put in your company's DNS server? (3). let's suppose the iterated query is used. How do people get IP address of your Web site?(8.0分)

（1）(starwar.com.cn, dns1.starwar.com.cn, NS)、(dns1.starwar.com.cn, 128.119.12.40, A)

（2）（www.starwar.com.cn, 128.119.12.55, A）、(www.starwar.com.cn, 128.119.12.56, A)、(galaxy.starwar.com.cn, 128.119.12.60, A)

（3）用户主机向本地dns服务器发送请求，该本地服务器则联系一个tld com服务器，然后tld com服务返回ns和a两条资源记录，之后本地服务器向128.119.12.40发送一个dns查询，请求www.starwar.com.cn的A记录，这条记录使得用户获得你的ip和web地址。

得分:8.0

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参考答案

收起

31. Suppose you can access the caches in the local DNS servers of your department. Can you propose a way to roughly determine the Web servers (outside your department) that are most popular among the users in your department? Explain.(8.0分)

在DNS缓存中出现频率最高的网络服务器，因为更多的使用者访问一个web服务器，对于那个服务器的DNS请求就会越频繁。

得分:8.0

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参考答案

收起

32. At the following networking environment, many users who use Web browsers at the 10 Mbps LAN have suffered long latency to access Internet through

the 1Mbps access link. Suggest two different solutions to reduce latency problems(8.0分)

（1）增加带宽

（2）添加一个web缓存器

第二次作业（003） （总分: 100 ）

得分:6.0

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参考答案

收起

33. Suppose within your web browser you click on a link to obtain a web page. Suppose that the IP address for the associated URL is not cached in your local host, so that a DNS look up is necessary to obtain the IP address. Suppose that n DNS servers are visited before your host receives the IP address from DNS; the successive visits incur a RTT of RTT1 , ..., RTTn. Further suppose that web page associated with the link contains exactly 3 objects, a small amount of HTML text. Let RTT0 denote the RTT between the local host and the server containing the object. Assuming zero transmission time of the objects, how much time elapses from when the client clicks on the link until the client receives the whole web page with (a) nonpersistent HTTP with no parallel TCP connections, (b) nonpersistent HTTP with parallel connections, (c) persistent HTTP with pipelining.(8.0分)

获取IP地址的时间：RTT0 + RTT1 + RTT2 + ... + RTTn

IP地址已知的响应时间：2RTT0 + RTT1 + RTT2 + ... + RTTn

得分:7.0

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参考答案

收起

34. Consider a short, 10-meter link, over which a sender can transmit at a rate of 150 bits/sec in both directions. Suppose that packets containing data are 100,000 bits long, and packets containing only control (e.g., ACK or handshaking) are 200 bits long. Assume that N parallel connections each get 1/N of the link bandwidth. Now consider the HTTP protocol, and suppose that each downloaded object is 100 Kbits long, and that the initial downloaded object contains 10 referenced objects from the same sender. Would parallel downloads via parallel instances of non-persistent HTTP make sense in this case? Now consider persistent HTTP. Do you expect significant gains over the non-persistent case? Justify and explain your answer.(8.0分)

10米短链路，忽略传播延迟。

并行连接的非持续连接且并行下载：

(200b / 150bps) * 3 + ((10^5)b / 150bps) + (200b / (150bps / 10)) * 3 + ((10^5)b / (150bps / 10)) = 7377.3s

持续连接：

(200b / 150bps) * 3 + ((10^5)b / 150bps) + 10 * (200b / 150bps + (10^5)b / 150bps) = 7351s

得分:8.0

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参考答案

收起

35. Consider distributing a file of F=5 Gbits to N peers. The server has an upload rate of us=20Mbps, and each peer has a download rate of di=1Mbps and an upload rate of u. For N=10,100, and 1,000 and u=100Kbps, 250Kbps, and 500Kbps, prepare a chart giving the minimum distribution time for each of the combinations of N and u for both client-server distribution and P2P distribution.(8.0分)

以下计算采用：1G = 1000M；时间单位为秒

c/s:

	10	100	1000
100	5000	25000	250000
250	5000	25000	250000
500	5000	25000	250000

p2p:

	10	100	1000
100	5000	16666.67	41666.67
250	5000	11111.11	18518.52
500	5000	7142.86	9615.38

得分:8.0

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