

POSTAL Book Package

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Computer Science & IT Objective Practice Sets

Computer Networks

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Application Layer

1. Match **List-I** (Protocol Layers) with **List-II** (Type of address used) and select the correct answer using the codes given below the lists:

List-I	List-II
A. Application layer	1. IP address
B. Network Layer	2. Port address
C. Data link layer	3. MAC address

Codes:

	A	B	C
(a)	1	2	3
(b)	2	3	1
(c)	2	1	3
(d)	3	1	2

2. Working of the WAN generally involves
 (a) Satellite (b) Frame Delay
 (c) ATM (d) All of these
3. DNS is used to locate the:
 (a) MAC address of URL
 (b) IP address of URL
 (c) Root domain of URL
 (d) Domain name of a URL
4. The Protocol Data Unit (PDU) for the application layer in the Internet stack is
 (a) Segment (b) Datagram
 (c) Message (d) Frame
5. Match column A with column B:

Column-A	Column-B
A. DNS	1. Port - 20
B. POP3	2. Port - 21
C. FTP (Data)	3. Port - 53
D. FTP (Control)	4. Port - 110
	5. Port - 69

Codes:

	A	B	C	D
(a)	3	4	2	1
(b)	3	4	1	2
(c)	3	5	1	2
(d)	3	5	2	1

6. With electronic-mail, the functionality you can do are following?
 1. send and read mail
 2. delete, reply to or forward
 3. Delete someone else's mail
 (a) only 1 (b) 1 and 3
 (c) 1 and 2 (d) All of these
7. SMTP is used for:—
 (a) file transfer with minimum capability and overhead
 (b) to monitor computers
 (c) transferring electronic-mail from one machine to another
 (d) to dynamically bind high level IP address to a low-level physical hardware message.
8. A high speed communication equipment typically would not be needed for
 (a) E-mail
 (b) Transferring large volume of data
 (c) Supporting communication between nodes in a LAN
 (d) All of these
9. Which one of the following is not a client-server application?
 (a) Internet chat (b) Web browsing
 (c) E-mail (d) Ping

10. Simple network management protocol (SNMP) is used for:
 - (a) Transfer electronic-mail from one machine to other
 - (b) Collecting information from and configuring, network devices such as hubs, switches and routers.
 - (c) file transfer with minimum capability
 - (d) Routing protocol for internet protocol (IP)
11. Which of the following protocol pairs can be used to send and retrieve e-mails (in that order)?
 - (a) IMAP, SMTP (d) SMTP, MIME
 - (c) IMAP, POP3 (d) SMTP, POP3
12. Consider the following statements :
 S_1 : SMTP protocol can send image files with the help of POP3 protocol.
 S_2 : POP3 is more secure than IMAP4 for retrieving information from server.
 Which of the following is correct ?
 - (a) Only S_1 is true
 - (b) Only S_2 is true
 - (c) Both S_1 and S_2 are true
 - (d) Neither of S_1 or S_2 is true
13. Which of the following is true about Flow Control in FTP and TFTP respectively? (yes, if it exists and no, if does not exist).
 - (a) YES, YES (b) NO, NO
 - (c) YES, NO (d) NO, YES
14. Which is the correct option for statement P and Q .
 P : Port 80 is used by FTP to transfer data.
 Q : DNS runs on top of UDP.
 - (a) Both are true (b) Both are false
 - (c) Only P is true (d) Only Q is true
15. The values in the HTTP message's cookie field stored at the
 - (a) Client side (b) Server side
 - (c) Both side (d) None side
16. To convert the "iitb.cse.in" to its IP address, which of the following is needed?
 - (a) TCP (b) ARP
 - (c) DNS (d) HTTP
17. Consider the three commands: PROMPT, HEAD and RCPT. Which of the following options indicate a correct association of these commands with protocols where these are used?
 - (a) HTTP, SMTP, FTP
 - (b) FTP, HTTP, SMTP
 - (c) HTTP, FTP, SMTP
 - (d) SMTP, HTTP, FTP
18. Consider different activities related to email
 $m1$: Send an email from a mail client to a mail server
 $m2$: Download an email from mailbox server to a mail client
 $m3$: Checking email in a web browser
 - (a) $m1$:HTTP $m2$:SMTP $m3$:POP
 - (b) $m1$:SMTP $m2$:FTP $m3$:HTTP
 - (c) $m1$:SMTP $m2$:POP $m3$:HTTP
 - (d) $m1$:POP $m2$:SMTP $m3$:IMAP
19. Which of the following protocol allows non-ASCII data to be sent through e-mail?
 - (a) POP3 (b) IMAP4
 - (c) TELNET (d) MIME
20. The protocols can use multiple TCP connections between the same client and the server, which one is that
 - (a) HTTP, TELNET (b) HTTP, FTP
 - (c) FTP, SMTP (d) HTTP, SMTP
21. Match the following **List-I** with **List-II**:

List-I	List-II
P. SMTP	1. Application layer
Q. BGP	2. Transport layer
R. TCP	3. Data link layer
S. PPP	4. Network layer
	5. Physical layer

Codes:

 - (a) P-2, Q-1, R-3, S-5
 - (b) P-1, Q-4, R-2, S-3
 - (c) P-1, Q-4, R-2, S-5
 - (d) P-2, Q-4, R-1, S-3

Which of the following is correct:

- (a) Only 1 is true
- (b) Only 2 is false
- (c) Both 1 and 2 are true
- (d) Both 1 and 2 are false

29. HELO and PORT, respectively, are commands from the protocols

- (a) FTP and HTTP
- (b) TELNET and POP3
- (c) HTTP and TELNET
- (d) SMTP and FTP

30. Identify the correct sequence in which the following packets are transmitted on the network by a host when a browser requests a webpage from a remote server, assuming that the host has just been restarted.

- (a) HTTP GET request, DNS query, TCP SYN
- (b) DNS query, HTTP GET request, TCP SYN
- (c) DNS query, TCP SYN, HTTP GET request
- (d) TCP SYN, DNS query, HTTP GET request

31. Consider the following clauses:

- (i) Not inherently suitable for client authentication.
- (ii) Not a state sensitive protocol.
- (iii) Must be operated with more than one server.
- (iv) Suitable for structured message organization.
- (v) May need two ports on the server side for proper operation.

The option that has the maximum number of correct matches is

- (a) IMAP-(i), FTP-(ii), HTTP-(iii), DNS-(iv), POP3-(v)
- (b) FTP-(i), POP3-(ii), SMTP-(iii), HTTP-(iv), IMAP-(v)
- (c) POP3-(i), SMTP-(ii), DNS-(iii), IMAP-(iv), HTTP-(v)
- (d) SMTP-(i), HTTP-(ii), IMAP-(iii), DNS-(iv), FTP-(v)

32. Which one of the following protocols is NOT used to resolve one form of address to another one?

- (a) DNS
- (b) ARP
- (c) DHCP
- (d) RARP

33. Which of the following protocol is used for remote terminal connection service?

- (a) TELNET
- (b) FTP
- (c) RARP
- (d) UDP

■■■■

Answers Application Layer

- | | | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1. (c) | 2. (d) | 3. (b) | 4. (c) | 5. (b) | 6. (c) | 7. (c) | 8. (a) | 9. (d) |
| 10. (b) | 11. (d) | 12. (d) | 13. (d) | 14. (d) | 15. (c) | 16. (c) | 17. (b) | 18. (c) |
| 19. (d) | 20. (b) | 21. (b) | 22. (b) | 23. (c) | 24. (d) | 25. (c) | 26. (a) | 27. (a) |
| 28. (d) | 29. (d) | 30. (c) | 31. (d) | 32. (a) | 33. (a) | | | |

Explanations Application Layer

1. (c)
Application layer uses port numbers (address).
Network layer deals with IP addresses and Data link layer deals with physical address of the device (MAC address).
2. (d)
WAN is used to connect LAN's and other types of network, its working includes satellites, frame way and asynchronous transfer mode.
3. (b)
Domain Name Servers (DNS) maintain a directory of domain names and translate them to IP addresses. This is vital because, although domain names are easy for people to remember, computers or machines, access websites based on IP addresses.
4. (c)
Message → Application layer
Segment → Transport layer
Datagram → Network layer
Frame → Data link layer
5. (b)
The correct option is (b)
A. DNS → Port-53
B. POP3 → Port-69
C. FTP (Data) → Port-20
D. FTP (Control) → Port-21
6. (c)
With e-mail, we can send and read mail, delete our mail reply to an forward operation.
7. (c)
Transferring electronic-mail from one machine to another.
8. (a)
E-mail is a method of exchanging digital messages between people using digital devices. Size of E-mail is typically from 1 KB to 20 MB. So it does not require high speed communication equipment.
9. (d)
Internet chat, web browsing and E-mail all are client-server application. Ping is a utility. It is mainly used to check the connection between two computers, there is a chance both are client or one is client and another server. In chat system first user authentication required and it requires server.
10. (b)
SNMP is a protocol for network management purpose and is used for collecting information from and configuration, network devices such as servers, printers, hubs, switches, and routers on IP network.
11. (d)
SMTP is push protocol and to send email and POP3 is pull protocol i.e. to retrieve email.
12. (d)
Considering each statements,
 - SMTP is text-based protocol and MIME extension helps in sending graphics and multimedia. POP3 and IMAP4 are used for retrieving information from server, they do not help SMTP to send multimedia.
13. (d)
 - FTP does not have flow control and has to depend on other protocol (TCP).
 - In TFTP flow control exists, therefore it does not depend on other protocols. Hence it uses UDP as transport layer protocol.
14. (d)
FTP uses port 20 to transfer data so statement *P* is false and *Q* is correct statement.
15. (c)
A cookie can be used to maintain state between HTTP transaction. So both client and server store the cookie value.
16. (c)
Domain name system converts given name to its IP address via a DNS server by using dnslookup, dig, or host.

17. (b)
RCPT: Recipient to, As the name suggest it is used in SMTP (Simple Mail Transfer protocol).
HEAD: This is used in HTTP to get the meta-information, to decide the category of packet.
Prompt: Turns off prompting for individual files when using the mget or mput commands.
18. (c)
SMTP is typically used by user clients for sending mails. POP is used by clients for receiving mails. Checking mails in web browser is a simple HTTP process.
19. (d)
Multipurpose internet mail extension is a supplementary protocol that allows non-ASCII data to be sent through e-mail.
20. (b)
HTTP and FTP protocols can use multiple TCP connections between the same client and the server. FTP uses data and control connectons used with two separate TCP connections.
21. (b)
P. SMTP = Application Layer protocol
Q. BGP = Network Layer protocol
R. TCP = Transport Layer protocol
S. PPP = Data Link Layer protocol
22. (b)
HTTP: Transfer Multimedia Information
POP: Receiving email messages
SMTP: Sending email messages
MIME: Send email attachments
HTTP: Hyper text transfer protocol
POP: Post office protocol
SMTP: Simple mail transfer protocol
MIME: Multipurpose Internet mail extensions
23. (c)
DHCP is used to provide IP information to hosts on your network.
24. (d)
IMAP : It distributes mail boxes across multiple servers.
FTP: Requires two ports: 20 and 21 for FTP-data and FTP-control respectively.
HTTP: HTTP is a stateless protocol. Hence not a state sensitive protocol.
DNS: This protocol maintains it's database is a structured and hierarchial manner.
SMTP: Intersect standard for e-mail transmission and not suitable for client server communication.
25. (c)
Given R_1 , R_2 and R_3 are routers
At R_2 intruder can learn the TCP port numbers and IP address of Q and H .
26. (a)
Only statement S_1 and S_2 are correct.
27. (a)
Correct statement is (a).
The UDP uses the DHCP, SNMP and TFTP services.
28. (d)
1. It will send 4 message, and receive 4 response messages.
2. Since persistent HTTP leaves connection open if connection is not timeout and we don't close it. So we can send more webpages over persistent HTTP connection.
29. (d)
HELO: Initiates a conversation with the mail server. When using this command you can specify your domain name so that the mail server knows who you are.
The PORT command is sent by an FTP client to establish a secondary connection (address and port) for data to travel over.
30. (c)
DNS query, TCP SYN, HTTP GET request.