

All the Multiple Choice Question and Answer (MCQs) have been compiled from the books of Data Communication and Networking by the well known author **behrouz A forouzan**.

This Data Communication and Networking – **Network Layer: Logical Addressing** multiple choice Questions and Answers (MCQ) PDF cover the below lists of topics.

1. Packet switching Multiple Choice Question and Answer.
2. The datagram approach and the virtual circuit approach Multiple Choice Question and Answer.
3. Internet address (or IP address) Multiple Choice Question and Answer.
4. classes of IP addresses Multiple Choice Question and Answer.
5. Unicast communication Multiple Choice Question and Answer.
6. Multicast communication Multiple Choice Question and Answer
7. Subnetting ,Subnet masking Multiple Choice Question and Answer
8. DHCP-dynamic configuration protocol Multiple Choice Question and Answer
9. Network address translation (NAT) Multiple Choice Question and Answer
10. IP protocol,IPv6 Multiple Choice Question and Answer
11. Next-hop routing ,Network-specific routing ,Host-specific routing ,default routing,static routing Multiple Choice Question and Answer
12. Classless addressing Multiple Choice Question and Answer

Practice now to sharpen your concept.

- 1. An IPv4 address consists of _____ bits.**
 - A. 4
 - B. 8
 - C. 32
 - D. 64

- 2. In IPv4, class _____ has the greatest number of addresses in each block**
 - A. A
 - B. B
 - C. C
 - D. D

- 3. Identify the class of the following IPv4 address: 4.5.6.7.**
 - A. A
 - B. B
 - C. C
 - D. none of the above

- 4. Identify the class of the following IPv4 address: 229.1.2.3.**
 - A. A
 - B. B
 - C. D
 - D. None of the above

- 5. Identify the class of the following IPv4 address: 191.1.2.3.**
 - A. A
 - B. B
 - C. C

D. None of the above

6. What is the result of ANDing 255 and 15?

A. 255

B. 15

C. 0

D. none of the above

7. What is the result of ANDing 0 and 15?

A. 255

B. 15

C. 0

D. None of the above

8. What is the result of ANDing 254 and 15?

A. 254

B. 14

C. 0

D. none of the above

9. What is the result of ANDing 192 and 65?

A. 192

B. 65

C. 64

D. none of the above

10. Which one is not a contiguous mask?

A. 255.255.255.254

B. 255.255.224.0

C. 255.148.0.0
D. all are

Answer key for MCQ SET- 1	
Q-1	Correct Answer :32
Q-2	Correct Answer :A
Q-3	Correct Answer :A
Q-4	Correct Answer :D
Q-5	Correct Answer :B
Q-6	Correct Answer :15
Q-7	Correct Answer :0
Q-8	Correct Answer :14
Q-9	Correct Answer :64
Q-10	Correct Answer :255.148.0.0

Network Layer: Logical Addressing MCQ Set-2

- 1. The number of addresses in a class C block is _____**
A. 65,534
B. 16,777,216
C. 256
D. none of the above
- 2. The number of addresses in a class B block is _____**
A. 65,536
B. 16,777,216
C. 256
D. none of the above

- 3. The number of addresses in a class A block is _____**
A. 65,534
B. 16,777,216
C. 256
D. none of the above
- 4. The number of addresses assigned to an organization in classless addressing _____**
A. can be any number
B. must be a multiple of 256
C. must be a power of 2
D. none of the above
- 5. The first address assigned to an organization in classless addressing _____**
A. must be a power of 4
B. must be evenly divisible by the number of addresses
C. must belong to one of the A, B, or C classes
D. none of the above
- 6. Which address could be the beginning address of a block of 32 classless addresses**
A. 2.4.6.5
B. 2.4.6.16
C. 2.4.6.64
D. none of the above

7. Which address could be the beginning address of a block of 16 classless addresses?

- A. 2.4.6.5
- B. 2.4.6.15
- C. 2.4.6.62
- D. none of the above

8. Which address could be the beginning address of a block of 256 classless addresses

- A. 2.4.6.5
- B. 2.4.6.15
- C. 2.4.6.0
- D. none of the above

9. What is the first address of a block of classless addresses if one of the addresses is 12.2.2.76/27?

- A. 12.2.2.0
- B. 12.2.2.32
- C. 12.2.2.64
- D. none of the above

10. What is the first address of a block of classless addresses if one of the addresses is 12.2.2.76/10?

- A. 12.0.0.0
- B. 12.2.0.0
- C. 12.2.2.2
- D. none of the above

Answer key for MCQ SET- 2	
Q-1	Correct Answer :256
Q-2	Correct Answer :65,536
Q-3	Correct Answer :16,777,216
Q-4	Correct Answer :must be a power of 2
Q-5	Correct Answer :must be evenly divisible by the number of addresses
Q-6	Correct Answer :2.4.6.64
Q-7	Correct Answer :none of the above
Q-8	Correct Answer :2.4.6.0
Q-9	Correct Answer :12.2.2.64
Q-10	Correct Answer :12.0.0.0

Network Layer: Logical Addressing MCQ Set-3

1. What is the first address of a block of classless addresses if one of the addresses is 12.2.2.127/28?

- A. 12.2.2.0
- B. 12.2.2.96
- C. 12.2.2.112
- D. none of the above

2. Find the number of addresses in a block of classless addresses if one of the addresses is 12.2.2.7/24.

- A. 32
- B. 64
- C. 256
- D. none of the above

3. Find the number of addresses in a block of classless addresses if one of the addresses is 12.2.2.7/30.

- A. 2
- B. 4
- C. 8
- D. none of the above

4. What is the last address of a block of classless addresses if one of the addresses is 12.2.2.127/28?

- A. 12.2.2.16
- B. 12.2.2.112
- C. 12.2.2.127
- D. none of the above

5. What is the last address of a block of classless addresses if one of the addresses is 12.2.2.6/30?

- A. 12.2.2.2
- B. 12.2.2.6
- C. 12.2.2.7
- D. none of the above

6. An organization is granted a block; one address is 2.2.2.64/20. The organization needs 10 subnets. What is the subnet prefix length?

- A. /20
- B. /24
- C. /25
- D. none of the above

7. An organization is granted a block; one address is 2.2.2.64/25. If the subnet prefix length is /28, what is the maximum number of subnets?

- A. 2
- B. 4
- C. 8
- D. none of the above

8. An organization is granted a block of classless addresses with the starting address 199.34.76.64/28. How many addresses are granted?

- A. 8
- B. 16
- C. 32
- D. none of the above

9. An organization is granted a block of classless addresses with the starting address 199.34.76.128/29. How many addresses are granted?

- A. 8
- B. 16
- C. 32
- D. none of the above

10. An organization is granted a block of classless addresses with the starting address 199.34.32.0/27. How many addresses are granted?

- A. 8
- B. 16
- C. 32
- D. none of the above

Answer key for MCQ SET- 3	
Q-1	Correct Answer :12.2.2.112
Q-2	Correct Answer :256
Q-3	Correct Answer :4
Q-4	Correct Answer :12.2.2.127
Q-5	Correct Answer :12.2.2.7
Q-6	Correct Answer :/24
Q-7	Correct Answer :8
Q-8	Correct Answer :16
Q-9	Correct Answer :8
Q-10	Correct Answer :32

Network Layer: Logical Addressing MCQ Set-4

1. In classless addressing, the _____ is another name for the common part of the address range

- A. suffix
- B. prefix
- C. netid
- D. none of the above

2. In classless addressing, the _____ is the varying part (similar to the hostid).

- A. suffix
- B. prefix
- C. hostid
- D. none of the above

3. In classless addressing, the prefix length defines the

-
- A. netid
 - B. hostid
 - C. mask
 - D. none of the above

4. In a block, the prefix length is /24; what is the mask?

- A. 255.255.255.0
- B. 255.255.242.0
- C. 255.255.0.0
- D. none of the above

5. In a block, the prefix length is /15; what is the mask?

- A. 255.254.0.0
- B. 255.255.255.0
- C. 255.255.255.128
- D. none of the above

6. In a block, the mask is 255.255.192.0; what is the prefix length?

- A. /20
- B. /28
- C. /18
- D. none of the above

7. An IPv6 address is _____ bits long

- A. 32
- B. 64
- C. 128
- D. none of the above

8. What is the default mask for class A in CIDR notation?

- A. /9
- B. /8
- C. /16
- D. none of the above

9. What is the default mask for class B in CIDR notation?

- A. /9
- B. /8
- C. /16
- D. none of the above

10. What is the default mask for class C in CIDR notation?

- A. /24
- B. /8
- C. /16
- D. none of the above

Answer key for MCQ SET- 4	
Q-1	Correct Answer :prefix
Q-2	Correct Answer :suffix
Q-3	Correct Answer :mask
Q-4	Correct Answer :255.255.255.0
Q-5	Correct Answer :255.254.0.0
Q-6	Correct Answer :/18
Q-7	Correct Answer :128

Q-8	Correct Answer :/8
Q-9	Correct Answer :/16
Q-10	Correct Answer :/24

Network Layer: Logical Addressing MCQ Set-5

- 1. An IPv6 address consists of _____ bytes (octets);**
A. 4
B. 8
C. 16
D. none of the above

- 2. To make addresses more readable, IPv6 specifies _____ notation**
A. dotted decimal
B. hexadecimal colon
C. both a and b
D. none of the above

- 3. In hexadecimal colon notation, a 128-bit address is divided into _____ sections, each _____ hexadecimal digits in length**
A. 8: 2
B. 8: 3
C. 8: 4
D. none of the above

- 4. An IPv6 address can have up to _____ colons**
A. 8
B. 7
C. 4

D. none of the above

5. An IPv6 address can have up to _____ hexadecimal digits

- A. 16
- B. 32
- C. 8
- D. none of the above

6. In IPv6, _____ address defines a single computer

- A. a unicast
- B. a multicast
- C. an anycast
- D. none of the above

7. In IPv6, _____ address defines a group of computers with addresses that have the same prefix

- A. a unicast
- B. a multicast
- C. an anycast
- D. none of the above

8. In IPv6, _____ address defines a group of computers

- A. a unicast
- B. a multicast
- C. an anycast
- D. none of the above

9. In IPv6, the _____ prefix defines the purpose of the address

- A. type

- B. purpose
- C. both a and b
- D. none of the above

10. In IPv6, the _____ address is generally used by a normal host as a unicast address.

- A. provider-based unicast
- B. link local
- C. site local
- D. none of the above

Answer key for MCQ SET- 5	
Q-1	Correct Answer :16
Q-2	Correct Answer :hexadecimal colon
Q-3	Correct Answer :8: 4
Q-4	Correct Answer :7
Q-5	Correct Answer :32
Q-6	Correct Answer :a unicast
Q-7	Correct Answer :an anycast
Q-8	Correct Answer :a multicast
Q-9	Correct Answer :type
Q-10	Correct Answer :provider-based unicast