# Department of Computer Science and Engineering
## Islamic University of Technology (IUT)
A subsidiary organ of OIC

## Mid-Semester Lab Exam

## CSE 4512: Computer Networks Lab

**Name:** Md Farhan Ishmam
**Student ID:** 180041120
**Section:** CSE-1
**Semester:** Fifth
**Academic Year:** 2021

# Questions and Answer:

## IP Addresses of Hosts:

1. What is the IP address of **PC1** of the subnetwork **"Network1"**?
Ans: 172.20.20.4 /24
2. What is the default gateway address of **PC1** of the subnetwork **"Network1"**?
Ans: 172.20.20.1
3. What is the IP address of **PC2** of the subnetwork **"Network1"**?
Ans: 172.20.20.5 /24
4. What is the default gateway address of **PC2** of the subnetwork **"Network1"**?
Ans: 172.20.20.1
5. What is the IP address of **PC3** of the subnetwork **"Network2"**?
Ans: 10.10.20.4 /24
6. What is the default gateway address of **PC3** of the subnetwork **"Network2"**?
Ans: 10.10.20.1
7. What is the IP address of **PC4** of the subnetwork **"Network2"**?
Ans: 10.10.20.5 /24
8. What is the default gateway address of **PC4** of the subnetwork **"Network2"**?
Ans: 10.10.20.1
9. What is the IP address of **PC5** of the subnetwork **"Network3"**?
Ans: 192.168.20.4 /24
10. What is the default gateway address of **PC5** of the subnetwork **"Network3"**?
Ans: 200.200.20.10
11. What is the IP address of **PC6** of the subnetwork **"Network3"**?
Ans: 192.168.20.5 /24
12. What is the default gateway address of **PC6** of the subnetwork **"Network3"**?
Ans: 200.200.20.10


## IP Addresses of the interfaces of the Routers:

13. What is the IP address of the interface **"serial0/1/0"** of the **Core Router?** *(If you don't use and configure the interface, write "not used")*
Ans: 200.200.20.1 /30
14. What is the IP address of the interface **"serial0/1/1"** of the **Core Router?** *(If you don't use and configure the interface, write "not used")*
Ans: 200.200.20.5 /30
15. What is the IP address of the interface **"serial0/2/0"** of the **Core Router?** *(If you don't use and configure the interface, write "not used")*
Ans: 200.200.20.9 /30

16. *What is the IP address of the interface **"serial0/2/1"** of the **Core Router?** (If you don't use and configure the interface, write "not used")*
   Ans: Not used

17. *What is the IP address of the interface **"serial0/1/0"** of **Router0** of the subnetwork **"Network1"?** (If you don't use and configure the interface, write "not used")*
   Ans: 200.200.20.2 /30

18. *What is the IP address of the interface **"serial0/1/1"** of **Router0** of the subnetwork **"Network1"?** (If you don't use and configure the interface, write "not used")*
   Ans: Not used

19. What is the IP address of the interface **"serial0/2/0"** of **Router0** of the subnetwork **"Network1"?** *(If you don't use and configure the interface, write "not used")*
   Ans: Not used

20. What is the IP address of the interface **"serial0/2/1"** of **Router0** of the subnetwork **"Network1"?** *(If you don't use and configure the interface, write "not used")*
   Ans: Not used

21. What is the IP address of the interface **"serial0/1/0"** of **Router1** of the subnetwork **"Network2"?** *(If you don't use and configure the interface, write "not used")*
   Ans: 200.200.20.6 /30

22. What is the IP address of the interface **"serial0/1/1"** of **Router1** of the subnetwork **"Network2"?** *(If you don't use and configure the interface, write "not used")*
   Ans: Not used

23. What is the IP address of the interface **"serial0/2/0"** of **Router1** of the subnetwork **"Network2"?** *(If you don't use and configure the interface, write "not used")*
   Ans: Not used

24. What is the IP address of the interface **"serial0/2/1"** of **Router1** of the subnetwork **"Network2"?** *(If you don't use and configure the interface, write "not used")*
   Ans: Not used

25. What is the IP address of the interface **"serial0/1/0"** of **Router2** of the subnetwork **"Network3"?** *(If you don't use and configure the interface, write "not used")*
   Ans: 200.200.20.10 /30

26. What is the IP address of the interface **"serial0/1/1"** of **Router2** of the subnetwork **"Network3"?** *(If you don't use and configure the interface, write "not used")*
   Ans: Not used

27. What is the IP address of the interface **"serial0/2/0"** of **Router2** of the subnetwork **"Network3"?** *(If you don't use and configure the interface, write "not used")*
   Ans: Not used

28. What is the IP address of the interface **"serial0/2/1"** of **Router2** of the subnetwork **"Network3"?** *(If you don't use and configure the interface, write "not used")*
   Ans: Not used

29. What is the Router ID of the router **"Router2"** of the subnetwork "Network3" after the configuration of OSPF routing?

Ans: 200.200.20.2

## Screenshot of the routing table of the Routers:

30. Add a screenshot of the routing table of **Router0** of the subnetwork **"Network1"**.
Ans:

```
R0_120#
R0_120#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

      172.20.0.0/16 is variably subnetted, 2 subnets, 2 masks
C        172.20.20.0/24 is directly connected, GigabitEthernet0/0/0
L        172.20.20.1/32 is directly connected, GigabitEthernet0/0/0
      200.200.20.0/24 is variably subnetted, 2 subnets, 2 masks
C        200.200.20.0/30 is directly connected, Serial0/1/0
L        200.200.20.2/32 is directly connected, Serial0/1/0
```

31. Add a screenshot of the routing table of **Router1** of the subnetwork **"Network2"**.
Ans:

```
R1_120#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

      10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C        10.10.20.0/24 is directly connected, GigabitEthernet0/0/0
L        10.10.20.1/32 is directly connected, GigabitEthernet0/0/0
      172.20.0.0/24 is subnetted, 1 subnets
S        172.20.20.0/24 [1/0] via 200.200.20.5
S     192.168.20.0/24 [1/0] via 200.200.20.5
      200.200.20.0/24 is variably subnetted, 2 subnets, 2 masks
C        200.200.20.4/30 is directly connected, Serial0/1/0
L        200.200.20.6/32 is directly connected, Serial0/1/0
```

32. Add a screenshot of the routing table of **Router2** of the subnetwork **"Network3"**.
Ans:

```
R2_120#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     192.168.20.0/24 is variably subnetted, 2 subnets, 2 masks
C        192.168.20.0/24 is directly connected, GigabitEthernet0/0/0
L        192.168.20.1/32 is directly connected, GigabitEthernet0/0/0
     200.200.20.0/24 is variably subnetted, 2 subnets, 2 masks
C        200.200.20.8/30 is directly connected, Serial0/1/0
L        200.200.20.10/32 is directly connected, Serial0/1/0
```

33. Add a screenshot of the routing table of the **Core Router**.
    Ans:

```
CR_120#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile,
B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter
area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external
type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E -
EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia -
IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/24 is subnetted, 1 subnets
S        10.10.20.0/24 [1/0] via 200.200.20.6
O    192.168.20.0/24 [110/65] via 200.200.20.10, 00:00:02,
Serial0/2/0
     200.200.20.0/24 is variably subnetted, 6 subnets, 2 masks
C        200.200.20.0/30 is directly connected, Serial0/1/0
L        200.200.20.1/32 is directly connected, Serial0/1/0
C        200.200.20.4/30 is directly connected, Serial0/1/1
L        200.200.20.5/32 is directly connected, Serial0/1/1
C        200.200.20.8/30 is directly connected, Serial0/2/0
L        200.200.20.9/32 is directly connected, Serial0/2/0

CR_120#
```