

Conmutación y Enrutamiento I

Examen Final

Nombre: _____

Laboratorios:	
Practico:	
Examen Final:	
Nota Final:	

1. En la topología OSPF explique lo siguiente: (10 puntos)

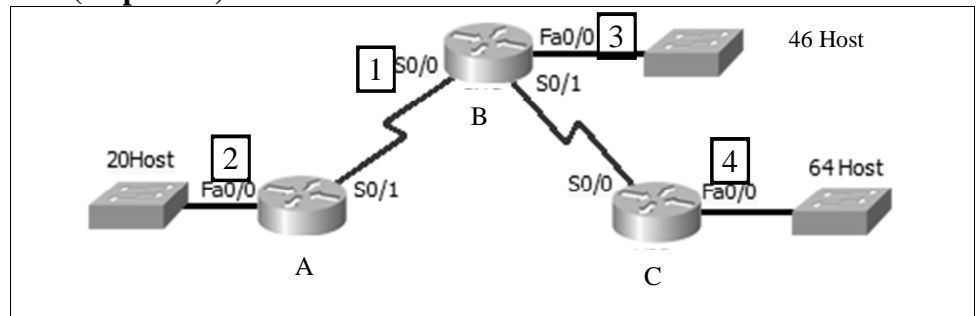
Area Backbone:

Area Stub:

Area no stub:

2. Escoja las redes correctas (10 puntos)

192.168.10.197/27	
192.168.10.10/25	
192.168.10.248/27	
192.168.10.190/26	
192.168.10.225/30	
192.168.10.224/30	



3. En base a las siguientes salidas de comandos responder las preguntas (15 puntos)

```

MATRIZ#show ip protocols
Routing Protocol is "eigrp 10 "
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  EIGRP metric weight K1=1, K2=1, K3=1, K4=0, K5=0
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
  Redistributing: eigrp 10
    Automatic network summarization is not in effect
  Maximum path: 4
  Routing for Networks:
    10.0.1.0/30
    192.168.1.0/30
    192.168.1.8/30

```

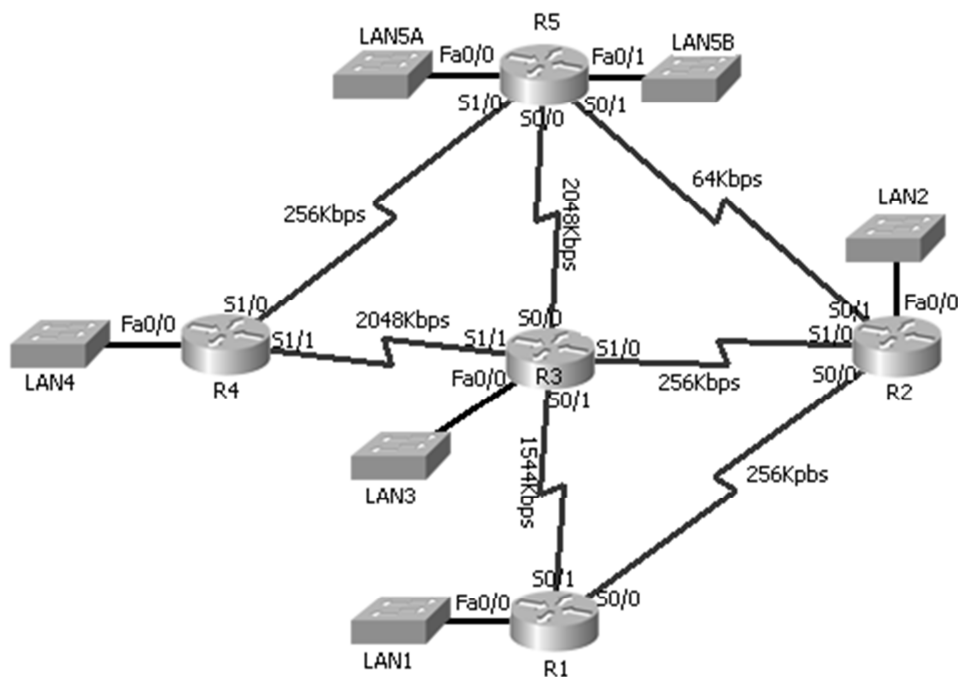
```

172.16.1.0/24
Passive Interface(s):
  FastEthernet0/0
  Loopback0
Routing Information Sources:
  Gateway      Distance    Last Update
  192.168.1.2   90          2635847
  192.168.1.9   90          2645065
Distance: internal 90 external 170

```

- Cual es el numero del Sistema Autonomo de esta red?
- Que componentes estan siendo empleados para el calculo de la metrica?
- Existen interfaces que no envian los mensajes de ruteo? Cuales?
- Cuantas redes estan asociadas a este ruteador?
- Cual es el numero maximo de dispositivos que un paquete puede atravesar en esta red?

4. La topología mostrada emplea protocolo de enrutamiento OSPF. Encontrar todos los cálculos de las rutas para los routers (30 puntos)



5. En base a las siguientes salidas de comandos responder las preguntas (15 puntos)

```
Sucursal#sh ip eigrp topology
IP-EIGRP Topology Table for AS 20

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - Reply status

P 192.168.1.0/30, 1 successors, FD is 2169856
   via Connected, Serial0/2/0
P 172.16.4.128/25, 1 successors, FD is 2172416
   via 192.168.1.2 (2172416/28160), Serial0/2/0
P 0.0.0.0/0, 1 successors, FD is 3449856
   via 192.168.1.2 (3449856/1280256), Serial0/2/0
P 192.168.1.4/30, 2 successors, FD is 2681856
   via 192.168.1.2 (2681856/2169856), Serial0/2/0
   via 192.168.1.9 (2681856/2169856), Serial0/2/1
P 172.16.2.0/24, 1 successors, FD is 2172416
   via 192.168.1.9 (2172416/28160), Serial0/2/1
P 172.16.4.0/25, 1 successors, FD is 2172416
   via 192.168.1.9 (2172416/28160), Serial0/2/1
P 192.168.1.8/30, 1 successors, FD is 2169856
   via Connected, Serial0/2/1
P 172.16.1.0/24, 1 successors, FD is 28160
   via Connected, FastEthernet0/0
```

- a) Cual es el numero del Sistema Autonomo de esta red?

- b) Cual interfaz es el sucesor factible para la red 192.168.1.8/30?

- c) Cual es la Distancia Factible para la red 172.16.2.0/24?

- d) Cual es la Distancia Reportada para la red 172.16.2.0/24?

- e) DUAL esta calculando una nueva ruta para la red 192.168.1.4/30?

6. En base a las siguientes salidas de comandos dibujar la topología (20 puntos)

```
Terran#sh ip route

10.0.0.0/30 is subnetted, 5 subnets
C    10.0.1.0 is directly connected, Loopback0
D    10.0.1.4 [90/2297856] via 192.168.1.2, 00:00:30, Serial0/2/0
D    10.0.1.8 [90/2297856] via 192.168.1.2, 00:00:30, Serial0/2/0
D    10.0.1.12 [90/2297856] via 192.168.1.9, 00:00:20, Serial0/2/1
D    10.0.1.16 [90/2297856] via 192.168.1.9, 00:00:20, Serial0/2/1
172.16.0.0/16 is variably subnetted, 4 subnets, 2 masks
C    172.16.1.0/24 is directly connected, FastEthernet0/0
D    172.16.2.0/24 [90/2172416] via 192.168.1.9, 00:00:20, Serial0/2/1
D    172.16.4.0/25 [90/2172416] via 192.168.1.9, 00:00:20, Serial0/2/1
D    172.16.4.128/25 [90/2172416] via 192.168.1.2, 00:00:30, Serial0/2/0
192.168.1.0/30 is subnetted, 3 subnets
C    192.168.1.0 is directly connected, Serial0/2/0
D    192.168.1.4 [90/2681856] via 192.168.1.2, 00:00:30, Serial0/2/0
    [90/2681856] via 192.168.1.9, 00:00:20, Serial0/2/1
C    192.168.1.8 is directly connected, Serial0/2/1
D*EX 0.0.0.0/0 [170/3449856] via 192.168.1.2, 00:00:30, Serial0/2/0
```

```

Protos#sh ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       * - candidate default, U - per-user static route, o - ODR

Gateway of last resort is 0.0.0.0 to network 0.0.0.0

    10.0.0.0/30 is subnetted, 5 subnets
D       10.0.1.0 [90/2297856] via 192.168.1.1, 00:06:37, Serial0/2/1
C       10.0.1.4 is directly connected, Loopback0
C       10.0.1.8 is directly connected, Loopback1
D       10.0.1.12 [90/2297856] via 192.168.1.6, 00:11:16, Serial0/2/0
D       10.0.1.16 [90/2297856] via 192.168.1.6, 00:11:16, Serial0/2/0
    172.16.0.0/16 is variably subnetted, 4 subnets, 2 masks
D       172.16.2.0/24 [90/2172416] via 192.168.1.6, 00:11:16, Serial0/2/0
C       172.16.3.0/24 is directly connected, FastEthernet0/0
D       172.16.4.0/25 [90/2172416] via 192.168.1.6, 00:11:16, Serial0/2/0
C       172.16.4.128/25 is directly connected, FastEthernet0/1
    192.168.1.0/30 is subnetted, 3 subnets
C       192.168.1.0 is directly connected, Serial0/2/1
C       192.168.1.4 is directly connected, Serial0/2/0
D       192.168.1.8 [90/2681856] via 192.168.1.6, 00:07:58, Serial0/2/0
           [90/2681856] via 192.168.1.1, 00:06:28, Serial0/2/1
S*    0.0.0.0/0 is directly connected, Loopback0

```

```

Zerg#sh ip route

    10.0.0.0/30 is subnetted, 5 subnets
D       10.0.1.0 [90/2297856] via 192.168.1.10, 00:06:53, Serial0/2/0
D       10.0.1.4 [90/2297856] via 192.168.1.5, 00:11:41, Serial0/2/1
D       10.0.1.8 [90/2297856] via 192.168.1.5, 00:11:41, Serial0/2/1
C       10.0.1.12 is directly connected, Loopback0
C       10.0.1.16 is directly connected, Loopback1
    172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
C       172.16.2.0/24 is directly connected, FastEthernet0/0
C       172.16.4.0/25 is directly connected, FastEthernet0/1
D       172.16.4.128/25 [90/2172416] via 192.168.1.5, 00:11:41, Serial0/2/1
    192.168.1.0/30 is subnetted, 3 subnets
D       192.168.1.0 [90/2681856] via 192.168.1.5, 00:08:44, Serial0/2/1
           [90/2681856] via 192.168.1.10, 00:06:53, Serial0/2/0
C       192.168.1.4 is directly connected, Serial0/2/1
C       192.168.1.8 is directly connected, Serial0/2/0
D*EX 0.0.0.0/0 [170/3449856] via 192.168.1.5, 00:11:41, Serial0/2/1

```