IP ADDRESS ALOTTED: 192.168.10.0

CLASS C ADDRESS :

SUBNET MASK: 255.255.255.0 ==🡺 11111111.11111111.1111111111.00000000

NUMBER OF NETWORKS REQUIRED: 3 [ 3 different departments ]

HOST BITS TO BE CONVERTED INTO NETWORK BITS: 2^2 ====🡺 2 NETWORK BITS.

NEW SUBNET: 255.255.255.192 ====🡺 11111111.11111111.11111111.11000000

NETWORK BLOCKS:

1. 192.168.10.0 - 192.168.10.63 ===========🡺 FINANCE DEPARTMENT

[VLAN 10]

* NETWORK ADDRESS: 192.168.10.0
* BROADCAST ADDRESS: 192.168.10.63

1. 192.168.10.64 - 192.168.10.127 ===========🡺 HR DEPARTMENT

[VLAN 20]

* NETWORK ADDRESS: 192.168.10.0
* BROADCAST ADDRESS: 192.168.10.63

1. 192.168.10.128 - 192.168.10.191 ==========🡺 RECEPTION DEPARTMENT

[VLAN 30]

* NETWORK ADDRESS: 192.168.10.128
* BROADCAST ADDRESS: 192.168.10.191

COMMANDS:

ACCESS PORTS CONFIGURATION ON THE SWITCH.:

interface range fa0/2-5

switchport mode access

switchport access vlan 10

interface range fa0/6-9

switchport mode access

switchport access vlan 20

interface range fa0/10-13

switchport mode access

switchport access vlan 30

INTER-VLAN ROUTING CONFIGURATION: --- configuring the sub-interfaces on the router…

interface gig0/0.10

encapsulation dot1Q 1

ip address 192.168.10.1 255.255.255.192

interface gig0/0.20

encapsulation dot1Q 20

ip address 192.168.10.65 255.255.255.192

interface gig0/0.30

encapsulation dot1Q 30

ip address 192.168.10.129 255.255.255.192

CONFIGURING DHCP:

service dhcp // starting the DHCP service in the router…

ip dhcp pool finance // introducing the pool-name and subsequently specifying the specifications of that is to be assigned to the devices attached to the network, here VLAN…

network 192.168.10.0 255.255.255.92

default router 192.168.10.1

dns-server 192.168.10.1

domain-name finance.com

exit

ip dhcp pool hr

network 192.168.10.64 255.255.255.92

default router 192.168.10.65

dns-server 192.168.10.65

domain-name hr.com

exit

ip dhcp pool reception

network 192.168.10.128 255.255.255.92

default router 192.168.10.129

dns-server 192.168.10.129

domain-name reception.com

exit

do write

do show start

CONFIGURING TRUNK PORT FOR THE TRAFFIC OF MUTIPLE VLANS TO PASS THROUGH:

int fa0/1

switchport mode trunk