Routing-

***The function of routing is to route packets between network that are not locally attached***

***Routing are three types***

* ***Static routing***
* ***Dynamic routing***
* ***Default routing***

***Static routing- In static routing routes are manually configured on the router by a network administrator.***

* ***By using next hop IP ---the address of the next router which will receive the traffic and forward it ahead***
* ***By using exit interface--- the outgoing interface of device which is used to send the traffic***

***Route preference criteria -:***

* ***Highest prefix length (CIDR)--- higher the prefix length ,less the no of host IP***
* ***Less no of host , less CPU utilization.***
* ***Lowest AD value – admintrative distance – Administrative distance is the trust worthiness of a routing protocol . Router use AD value to select best path when there are two of more different routes to the same destination***

***Static routing – 1***

***Directly connected -0***

***RIP – 120***

***EIGRP – 90,170***

***OSPF -110***

***BGP - 20 ,200***

* ***Lowest metric – routing protocol uses route metric value to find the best path when we have many route for same destination***

***---- this is use full for only Dynamic routing***

***RIP – hop count***

***EIGRP – K weights***

***OSPF - cost***

***---- Static routing metric is always 0.***

***Floating static routing – when you can manipulate the path from source to destination .***

***--- you can also perform load balancing***

***Default routing-a default route specifies a path that the router should take if the destination is unknown.All the IP datagram with unknown destination address are sent to the default route***

***Dynamic routing- In dynamic routing , routes are learned by using a routing protocol.Routing protocol will learn about routes from other neighboring routers running the same routing protocol Exmaple-OSPF,EIGRP,RIP***

***Dynamic routing are two types***

***1 – IGP – Interior Gateway protocol--*** An

Interior Gateway Protocol refers to a routing protocol that handles routing within a single autonomous system. Example - RIP, IGRP, EIGRP, and OSPF.

***2 – EGP- exterior gateway protocol--*** An Exterior Gateway Protocol refers to a routing protocol that handles routing between different Autonomous Systems (AS). Example:- Border Gateway Protocol (BGP).

***AS System(autonomous system)-an AS system is a group of network under a single administrative control.***

***Routing table-this table is used to store route information***