Sri Lanka Institute of Information Technology

Computer Networks
2nd Year, 2nd Semester

Tutorial 4

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1. Which of the following describes static routing?
   a) Routes are determined by a static RARP table.
   b) Routes are automatically entered into a routing table.
   c) Routes are manually entered into the routing table by the network administrator.
   d) Routes are received from the local name server and are permanently entered into the routing table.

2. What are the basic functions of a router?
   a) Maintaining the configuration files
   b) Maintaining updated routing tables
   c) Selecting the best paths to remote networks

3. Describe an AS (Autonomous System).
   - A collection of inter-connected routers and networks under one administrative control domain area.

4. Why do we use Routing Protocols?
   - To dynamically select the best path(s) toward the remote networks and maintain an updated routing table in every router based on the routing updates received from neighboring routers.

5. State the main difference between the Interior Routing protocols and Exterior Routing Protocol. Give examples of IP Routing protocols.

Interior Routing Protocols	**Exterior Routing Protocols**
Used within an Autonomous System (Intra AS routing)	Used between Autonomous Systems (Inter AS routing)
RIP, EIGRP, OSPF	BGP

6. What are the problems in RIP and write the solutions for them.

Problems	**Solutions**
Slow Convergence	Triggered Updates
Counting to Infinity	Route Poisoning
Instability	Split Horizon
RIP v1 can only be used for Classful IP address routing	RIP v2 can be used for both Classful and Classless IP address routing

7. Compare and contrast RIPv1 and RIPv2.

RIP v1	**RIP v2**
Used only in Classful networks	Used in both Classful and Classless networks
Network addresses are not automatically summarized	Network addresses are automatically summarized

8. Compare and contrast RIP and EIGRP.

RIP	**EIGRP**
Used in small networks	Used in large networks
Maximum number of routers is 16	Maximum number of routers is 256
Administrative Distance (AD) is 120	Administrative Distance (AD) is 90
Uses only a single metric (Hop count)	Uses a composite metric (Bandwidth, Delay of the line, Reliability, Load, Maximum Transmission Unit)