P12. Describe how loops in paths can be detected in BGP.

A:in BGP, when delivering the cost, it also needs to pass through which routers, so the router can view other routers.If it contains its own AS number,it means having loops in paths.

P16. Consider the following network. ISP B provides national backbone service to regional ISP A. ISP C provides national backbone service to regional ISP D. Each ISP consists of one AS. B and C peer with each other in two places using BGP. Consider traffic going from A to D. B would prefer

to hand that traffic over to C on the West Coast (so that C would have to absorb the cost of carrying the traffic cross-country), while C would prefer to get the traffic via its East Coast peering point with B (so that B would have carried the traffic across the country). What BGP mechanism

might C use, so that B would hand over A-to-D traffic at its East Coast peering point? To answer this question, you will need to dig into the BGP specification.

A: C only advertise its route to D via its east coast peering point with C.

P20. Suppose ASs X and Z are not directly connected but instead are connected by AS Y. Further suppose that X has a peering agreement with Y, and that Y has a peering agreement with Z. Finally, suppose that Z wants to transit all of Y’s traffic but does not want to transit X’s traffic. Does BGP allow Z to implement this policy?

A: Since Z wants to transit Y's traffic, Z will send route advertisements to Y. However, if Z advertizes routes to Y, Y can re-advertize those routes to X. Therefore, Z cannot preventing traffic from X to transit through Z.

P22. In Section 5.7, we saw that it was preferable to transport SNMP messages in unreliable UDP datagrams. Why do you think the designers of SNMP chose UDP rather than TCP as the transport protocol of choice for SNMP?

A: Often, the time when network management is most needed is in times of stress, when the network may be severely congested and packets are being lost. With SNMP running over TCP, TCP's congestion control would cause SNMP to back-off and stop sending messages at precisely the time when the network manager needs to send SNMP messages.