1. **RFC Related Class Discussion**: What new additional features does RIP v2 add over RIP v1?

2. Consider the network shown below. This network deploys OSPF routing protocol. Give the steps to build the forward search algorithm as it builds the routing database for node A.

3. (IGMP) There are three hosts A, B, and C in a network. Each host has a table that records the group id along with the associated timer as shown below. What would happen if the query is received at time 0? Show the sequence of report messages.

   A
   - 225.14.0.0  30
   - 228.42.0.0  12
   - 230.43.0.0  80
   B
   - 228.42.0.0  48
   - 221.71.0.0  50
   C
   - 225.14.0.0  62
   - 230.43.0.0  70

4. Consider the example internetwork shown in the figure below in which the source B sends packets to a multicast group G, whose members are shaded in gray. Show the shortest path multicast tree for source B.
5. (CIDR): What are the IP addresses used or spanned by the CIDR address 192.168.10.0/20?

6. We say that BGP is a *Path-Vector* protocol. What does that mean? How does it differ from a Distance-Vector protocol? How does it differ from a Link-State protocol?

7. Consider a situation where a customer’s network is multi-homed into a single provider’s network. In other words it has 2 connections into the provider’s network. It is generally not recommended that BGP be used between the customer and the provider. In such a case, the connection between the customer and the provider is static and the provider is responsible for advertising customer’s prefixes on behalf of the customer. In other words, with respect to the rest of the Internet routing system the organization is singly-homed, so the complexity of the multiple connections is not relevant in a global sense. However in some situations, this type of architecture mandates the use of BGP which means that the customer has a unique Autonomous System number. Can you outline a reason why?

**Reading Exercise for Next Week:** *RFC 1075 (DVMRP v2)*: Please download a copy of RFC 1075 from the resources section of COMP347 web page.