

CMSC 417 Homework Three

Due Tuesday, Oct 12.

1. What is the field 'pieces' of the info dictionary?
2. Why do peers have to urlencode the request before they sent it to the tracker?
3. What is the info hash?
4. What is one difference between a switch and a repeater?
5. Name the OSI layer that we meet the following devices and give one line description for each one. The devices are switch, router, bridge, hub, repeater.
6. Do routers have IP addresses? If so how many?
7. What are the contents of a forwarding database entry in a switch?
8. What is a cut-through switch? When it is different from a traditional switch?
9. Compare switches with routers.
10. Show or give an example that two dimensional parity can correct and detect a single bit error. Show a double-bit error that can be detected but not corrected.
11. (CRC) Assume that we use the 4-bit generator(G): 1001. If the data(D) that we want to send is 10101010; what is the value of the r additional bits, R that sender should send?
12. Consider a subnet with prefix 101.101.101.64/26. Give an example of one IP address that can be assigned to this network. Suppose that the ISP owns the block of addresses of the form 101.101.128.0/17. Suppose that it wants to create four subnets from this block., with each block having the same number of IP addresses. What are the prefixes (of form a.b.c.d/x) for the four subnets?