Solve all questions with explanation of all steps.

1. A n Internet Service Provider (ISP) has the following chunk of CIDR-based IP addresses available with it: 245.248.128.0/20. The ISP wants to give half of this chunk of addresses to Organization A, and a quarter to Organization B, while retaining the remaining with itself. Which of the following is a valid allocation of addresses to A and B?
2. 245.248.136.0/21 and 245.248.128.0/22
3. 245.248.128.0/21 and 245.248.128.0/22
4. 245.248.132.0/22 and 245.248.132.0/21
5. 245.248.136.0/24 and 245.248.132.0/21
6. Suppose computers A and B have IP addresses 10.105.1.113 and 10.105.1.91 respectively and they both use the same netmask N. Which of the values of N given below should not be used if A and B should belong to the same network?

A 255.255.255.0

B 255.255.255.128

C 255.255.255.192

D 255.255.255.224

1. If a class B network on the Internet has a subnet mask of 255.255.248.0, what is the maximum number of hosts per subnet?
2. The address of a class B host is to be split into subnets with a 6-bit subnet number. What is the maximum number of subnets and the maximum number of hosts in each subnet?
3. State the difference between TCP and UDP protocol.