# Assignment-Computer Network

**Q1. What are the reasons for using layered protocols?**

**Q2. If a binary signal is sent over a 3KHZ channel. Whose signal to noise ratio is 20db. What is the maximum achievable data rate?**

**Q3. Which of the OSI layers handles each of the following**

(a) **Breaking the transmitted bit stream in to frames.**
(b) **Determining which route through the subnet to use.**

**Q4. A noiseless 4KHZ channel is sampled every 1msec. What is the maximum data rate?**

**Q5. Explain the functions of**

(a) **Repeater**
(b) **Hub**
(c) **Bridge**
(d) **Modem**
(e) **Router**

**Q6. Measurements of a slotted aloha channel with an infinite number of users. Show that 10percent of the slots are idle.**

(a) **What is the channel load G?**
(b) **What is the throughput?**
(c) **Is the channel under loaded or overloaded**

**Q7. Data link protocols almost always put the CRC in a trailer, rather than in a header. Why?**

**Q8. Find relationship between redundancy bits required to correct a given number of m data bits.**

**Q9. Given a 10-bit sequence 1010011110 & a divisor of 1011.Find the CRC. Check your answer.**

**Q10. What is the purpose of collision free protocols? Name the current protocols used in network.**

**Q11. Are there any circumstances when a virtual circuit service will (or at least should) deliver packets out of order? Explain.**

**Q12.Suppose 198.53.202.0 is a network address and we want 4subnets. Find the following:**

(a) **Number of bits required for subnetting**
(b) **Standard subnet mask**
(c) **Custom subnet mask**
(d) **Starting Host ID & Last Host ID of each subnet**
(e) **Broadest address for each subnet**

**Q13. A class B network on the internet has a subnet mask of 255.255.240.0. What is the maximum number of hosts per subnet.**

**Q14. Write advantages of next generation IP($IPV_6$) over ($IPV_4$).**

**Q15. What are the problems encountered during releasing a connection in transport layer? Give some solution applicable to it?**

**Q16. Why does UDP exist? Would it not have enough to just let user processes send raw IP packets.**

**Q17. A TCP machine is sending windows of 65,535 bytes over a 1-Gbps channel that has a 10msec one way delay. What is the maximum throughput achievable? What is the line efficiency.**

**Q18. Explain the concept of network virtual terminal.**

**Q19. What is WWW? Write a short note on it**

**Q20. Differentiate between FTP and SMTP protocols. What is the use of TELNET?**