

National Institute of Technology Srinagar
Department of Computer Science & Engineering
Assignment # 4
Computer Networks

- Q1 What is NAT? How can NAT help in address depletion?
- Q2 What are the differences between classful addressing and classless addressing in IPv4?
- Q3 Briefly explain subnetting and supernetting. How do the subnet mask and supernet mask differ from a default mask in classful addressing?
- Q4 What is dotted decimal notation in IPv4 addressing? What is the number of bytes in an IPv4 address represented in dotted decimal notation? What is hexadecimal notation in IPv6 addressing?
- Q5 A site with 200 subnets has the class B address of 132.45.0.0. The site recently migrated to IPv6 with the subscriber prefix 58 IE: 1456:2314::ABCD/80. Design the subnets and define the subnet addresses, using a subnet identifier of 32 bits.
- Q6 List three transition strategies to move from IPv4 to IPv6. Explain the difference between tunnelling and dual stack strategies during the transition period. When is each strategy used?
- Q7 List the differences between IPv4 and IPv6.
- Q8 Explain the reason for the elimination of the checksum in the IPv6 header.
- Q9 Define fragmentation and explain why the IPv4 and IPv6 protocols need to fragment some packets. Is there any difference between the two protocols in this matter?
- Q10 The value of the total length field in an IPv4 datagram is 36, and the value of the header length field is 5. How many bytes of data is the packet carrying?
- Q11 What is the purpose of BGP?
- Q12 What is the difference between a direct and an indirect delivery?
- Q13 Why do OSPF messages propagate faster than RIP messages?
- Q14 A TCP connection is using a window size of 12,000 bytes, and the previous acknowledgment number was 22,001. It receives a segment with acknowledgment number 24,001 and window size advertisement of 12,000. Draw a diagram to show the situation of the window before and after.
- Q15 Compare the TCP header and the UDP header. List the fields in the TCP header that are missing from UDP header. Give the reason for their absence.
- Q16 What are the three domains of domain name space? What is the purpose of the inverse domain?
- Q17 List the difference between POP3 or IMAP4. Why do we need POP3 or IMAP4 for electronic mail?
- Q18 How is HTTP similar to SMTP?
- Q19 Discuss various features of Session layer.
- Q20 Explain the Congestion Control Algorithms used in Computer Networks.