

1. Application, transport, network, link, physical
2. TCP is more reliable
3. wireless, fiber, DSL, satellite, mobile, coaxial
4. HTTP: 80 SMTP: 25
5. client sends request as a server receives them
6. DNS is a RR format with type A, NS, CNAME, and MX
They support a name, value, type, and ttl.
7. Managing bandwidth allows DASH protocol to encode the data so that it can start streaming it properly.
9. Edge ISP installs clusters into access networks close to users homes, while bring home installs large clusters next to POP.
8. peer to peer request
10. It modified since field

1. True
2. False
3. False
4. False
5. False
6. False
7. True
8. True
9. False
10. True

1. C
2. B
3. B
4. C
5. C
6. B
7. C
8. B
9. B
10. D

- 1.1 In rdt 2.0 when can detect errors by comparing checksum values. If values aren't equal data is corrupted. when can recover from this by requesting to resend data with NAK packet.
- 1.2 In rdt 2.1 duplicate packets are handled by retransmitting the packets, while remaining at the same state.
- 1.3 In rdt 3.0 a time out will occur if packets are lost, the sender will then resend the data.
- 1.4 Both use a single timer
- 1.5 Set window size to $1/2$ the sequence number space

2. 1) $100 \text{ Mbps} / 20 = 5 \text{ users}$

2)