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0103 IT 191040 -> CN-ASSIGNMENT

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(1) Connection Oriented:-

-> It is related to the telephone system. It includes the connection establishment and connection termination. In connection oriented service handshake method is used to establish the connection service between sender and receiver

CONNECTIONLESS :-

-> It is related to the postal system. It does not include any connection establishment and connection termination. Connectionless service does not give the gaurantee of reliability. In this packets do not follow same path to reach destination

☆ Connection Oriented	Connectionless
-> It gives gaurantee of reliability	-> It does not give the gaurantee of reliability
-> Packets follow the same route	-> Packets does not follow the same route
-> Requires bandwidth of high range	-> Requires a bandwidth of low range

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2) Given → L = 100 byte → 800 bits
10 byte header is added
TCP/IP has 5 layers
So L after adding header
→ 100 + (10×5) → 150

∴ Efficiency = $\frac{100}{150} \times 100$ → 66.67%

3) Given → BW → 128 kbps → 128×10^3 bps
Distance → 35×10^9 m
Velocity → 3×10^8 m/s
T_p → $\frac{350}{3}$ sec ∴ { $\frac{35 \times 10^9}{3 \times 10^6}$ }

i) RTT → $2 \times T_p$ → $2 \times 350/3$ → 366.66 sec
→ 367 sec (≈)

ii) BW delay product → BW × RTT
→ 128 × 367
→ 46976

4) Given → BW → 50 Mbps → 50×10^6 bps
RTT → 80 ms = 0.08 s
Maximum Segment lifetime → 60 sec
T_x → 1/BW
→ log (60 × 50 × 10^3) → 22.5
→ 22 bits
(Answer)

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5) Given → Bit Stuffed Data

→ 11010111101011111001011111010

After bit stuffing →

⇒ 1101011111011111001011111010