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Question Paper Code: R4202

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2025

Fourth Semester

Computer Science and Engineering

R21UCS402 - COMPUTER NETWORKS

(Regulations R2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5Marks)

1. In TDM, the transmission rate of the multiplexed path is usually _____ the sum of the transmission rates of the signal sources. CO1- U
(a) equal to (b) less than (c) greater than (d) not related to
2. The message 11001001 is to be transmitted using the CRC polynomial $x^3 + 1$ to protect it from errors. The message that should be transmitted is: CO1- U
(a) 11001001000 (b) 11001001011 (c) 11001010 (d) 110010010011
3. Transmission from earth to satellite is called the CO1- U
(a) Up-link (b) Down-link (c) Low-link (d) High-link
4. The ability of a single network to span multiple physical networks is known as _____ CO1- U
(a) Sub netting (b) Masking (c) Fragmenting (d) Hopping
5. URL stands for _____ CO1- U
(a) unique reference label (b) uniform reference label
(c) uniform resource locator (d) unique resource locator

PART – B (5 x 3= 15 Marks)

6. Define the terms: Bandwidth and Latency. CO1- U
7. What is the propagation time if the distance between the two points is 15000km? Assume the propagation speed to be 2.4×10^8 m/s in cable. CO2- APP
8. What is meant by hop count? CO1- U

9. Give the difference between UDP and TCP. CO1- U
10. What is a digital Signature? CO1- U

PART – C (5 x 16= 80 Marks)

11. (a) Explain about Coaxial cable and fibre optic cable media for communication. CO1- U (16)
- Or
- (b) Explain briefly the different types of guided and unguided transmission media used for data transmission. CO1- U (16)
12. (a) Explain in detail about CSMA/CA with proper diagram. CO1- U (16)
- Or
- (b) Explain the various services in IEEE 802.11 Wireless WAN Technologies. CO1- U (16)
13. (a) Explain in detail about IPV4 and IPV6 header format. CO1- U (16)
- Or
- (b) Explain in detail about ICMP and IGMP. CO1- U (16)
14. (a) What is QoS in internetworking? State the techniques to improve QoS. CO1- U (16)
- Or
- (b) Explain about the TCP congestion control techniques in detail. CO1- U (16)
15. (a) Explain DNS with reference to its components and working. CO1- U (16)
- Or
- (b) Explain the concept of firewall in detail. CO1- U (16)