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Question Paper Code: 94202

B.E./B.Tech. DEGREE EXAMINATION, NOV 2023

Fourth Semester

Computer science and Engineering

19UCS402- COMPUTER COMMUNICATION AND NETWORKS

(Regulations 2019)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (5x 1 = 5 Marks)

- Which of the following topology has maximum cabling requirements? CO1- U
(a) Mesh topology (b) Star topology (c) Bus topology (d) Ring Topology
- Checksums use _____ arithmetic. CO1- U
(a) one's complement arithmetic (b) two's complement arithmetic
(c) either (a) or (b) (d) none of the above
- The network layer is concerned with _____ of data. CO1- U
(a) bits (b) frames (c) packets (d) bytes
- Transport layer aggregates data from different applications into a single stream before passing it to _____. CO1- U
(a) network address (b) host address
(c) both (a) and (b) (d) none of the mentioned
- The packet of information at the application layer is called _____ CO1-U

(a) Packet (b) Message (c) Segment (d) Frame

PART – B (5 x 3= 15Marks)

- Draw a hybrid topology with a ring backbone and three bus networks CO2- App
- Bit stuff the following data CO2- App
00011111110011111010001111111111111000011111
- Differentiate between classfull addressing and classless addressing in IPv4? CO1- U

9. What is meant by quality of service? What are the two categories of QoS attributes? CO1- U
10. Draw a working principle of SMTP in Application Layer CO1- U
- PART – C (5 x 16= 80Marks)
11. (a) Draw neat sketch of OSI reference model and list out various functions of the Layers. CO1-U (16)
- Or
- (b) Discuss the various transmission media that are employed in a network. CO1-U (16)
12. (a) Suppose we want to transmit the message 11001001 and protect it from errors using the CRC Polynomial X^3+1 . Use polynomial long division to determine the message that should be transmitted. Corrupt the left-most third bit of the transmitted message and show that the error is detected by the receiver using CRC Technique. CO2-App (16)
- Or
- (b) Using 5-bit sequence numbers, what is the maximum size of the sender and receiver windows for each of the following protocols? CO2-App (16)
- How?
- (i) stop and wait ARQ
- (ii) Go –back –N ARQ
- (iii) Selective Repeat ARQ
13. (a) Explain about IPV4? Compare IPV4 and IPv6 CO1-U (16)
- Or
- (b) With a neat diagram explain the concept of distance vector routing protocol. CO1-U (16)
14. (a) Explain the congestion control categories in Transport layer protocols. CO1- U (16)
- Or
- (b) Explain the characteristics and functionality of transmission control protocol CO1- U (16)
15. (a) Explain SMTP and HTTP .Give their uses, State strengths and weakness CO1- U (16)
- Or
- (b) Explain the architecture of WWW CO1- U (16)