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Reg. No. : | | | | | | | | | | |

Question Paper Code: 94202

B.E./B.Tech. DEGREE EXAMINATION, MAY 2022

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)

1. Which of the following topology has maximum cabling requirements? CO1- U

   (a) Mesh topology (b) Star topology (c) Bus topology (d) Ring Topology

2. 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

3. The network layer is concerned with _____ of data. CO1- U

   (a) bits (b) frames (c) packets (d) bytes

4. 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

5. 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)

6. Draw a hybrid topology with a ring backbone and three bus networks CO2- App

7. Bit stuff the following data CO2- App

   0001111111001111101000111111111111000011111

8. Differentiate between classful 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 X3+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? How?
(i) stop and wait ARQ
(ii) Go –back –N ARQ
(iii) Selective Repeat ARQ CO2-App (16)

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)