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**Question Paper Code: 54204**

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

Fourth Semester

Computer Science and Engineering

15UCS404- COMPUTER COMMUNICATION AND NETWORKS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A – (5 x 1 = 5 Marks)

1. For real time multimedia, file transfer, DNS and email, the transport layer protocols used are respectively CO1-R
  - (a) TCP, UDP, TCP and UDP
  - (b) UDP, UDP, TCP and TCP
  - (c) UDP, TCP, UDP and TCP
  - (d) TCP, TCP, UDP and UDP
2. Ethernet = 10Mbps, Jamming signal = 48bit, Round trip propagation delay = 46.4 $\mu$ s, minimum frame size =? CO2-U
  - (a) 512
  - (b) 440
  - (c) 100
  - (d) 1024
3. In an IP datagram one of the header fields is time to live (TTL) field because CO3-U
  - (a) It can be used to prevent packet looping
  - (b) It can be used to optimize throughput
  - (c) It can be used to reduce delays
  - (d) It can be used to prioritize packets
4. The network layer concerns with CO4-R
  - (a) Bits
  - (b) Frames
  - (c) Packets
  - (d) Datagrams
5. For the application layer in the Internet stack, the protocol data unit (PDU) is CO5-R
  - (a) Datagram
  - (b) Message
  - (c) Frame
  - (d) Segment

PART – B (5 x 3= 15Marks)

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|-----|---|-------|
| 6.  | Define : Bandwith and Latency                   | CO1-U |
| 7.  | Draw Ethernet frame format                      | CO2-R |
| 8.  | How router differ from bridge?                  | CO3-U |
| 9.  | Compare Circuit switching with packet switching | CO4-U |
| 10. | Write the use of HTTP.                          | CO5-U |

PART – C (5 x 16= 80Marks)

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|-----|--|-------|------|
| 11. | (a) List the layers of OSI model and elaborate the functionalities of each layer                             | CO1-R | (16) |
|     | Or   |       |      |
|     | (b) With neat diagram explain the TCP/IP Protocol suite  | CO1-R | (16) |
| 12. | (a) What is the need for error detection? Explain the methods used for error detection with typical example. | CO2-U | (16) |
|     | Or   |       |      |
|     | (b) Explain the working of CSMA/CD along with the physical properties and coding methods on Ethernet         | CO2-U | (16) |
| 13. | (a) Explain any four connecting devices in detail.   | CO3-R | (16) |
|     | Or   |       |      |
|     | (b) Explain the architecture of ATM along with its design goals and problems faced                           | CO3-U | (16) |
| 14. | (a) Explain in detail<br>(i) ICMP<br>(ii) IGMP   | CO4-U | (16) |
|     | Or   |       |      |
|     | (b) Explain about IPv6? Interpret the Header format of the same and Compare the versions of IPv4 and IPv6.   | CO4-U | (16) |
| 15. | (a) Define Congestion control. Describe in detail about the congestion control techniques of TCP in detail.  | CO5-U | (16) |
|     | Or   |       |      |
|     | (b) What is Domain Name System (DNS)? Describe the hierarchical tree structure of the same.                  | CO5-U | (16) |