



B.TECH DEGREE EXAMINATIONS: DEC 2022

(Regulation 2018)

Fourth Semester

ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

U18AII4201: Computer Networks

COURSE OUTCOMES

CO1: Understand the functionality and protocols operating in each layer of OSI reference model

CO2: Design error control, flow control and routing protocols

CO3: Construct network traffic characteristics and congestion control mechanism

CO4: Apply error control, flow control and routing protocols

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

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|--|-----|------|
| 1. List the components of data communication | CO1 | [K1] |
| 2. Infer the importance of block coding | CO2 | [K2] |
| 3. Why IPV5 is not extensively used? | CO2 | [K1] |
| 4. Interpret the logic of packet switching | CO2 | [K2] |
| 5. Compare and contrast routers and switches | CO3 | [K2] |
| 6. Show the mechanism of checksum in UDP | CO3 | [K1] |
| 7. Identify the differences between congestion control and avoidance | CO4 | [K3] |
| 8. What is the power if throughput=18 and delay=6? | CO4 | [K1] |
| 9. Compare and contrast IPV4 and IPV6 | CO1 | [K2] |
| 10. What do you mean by TLS and how it is associated with SSL? | CO3 | [K1] |

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

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| 11. a) Explain OSI model with respect to TCP/IP | 8 | CO2 | [K2] |
| b) Identify the importance of various topologies along with their applications. Also, detail the topology which is the most expensive. | 8 | CO3 | [K3] |

12.	a)	Explain the important aspects of circuit switching with respect to the aspects of TDM (Time Division Multiplexing) and FDM (Frequency Division Multiplexing)	16	CO4	[K2]
13.	a)	Plan and analyze few methods for enabling quality of service in any network connection	8	CO3	[K3]
	b)	Examine the ways of implementing leaky bucket and token bucket in congestion control	8	CO3	[K3]
14.	a)	Compare and contrast FTP and HTTP	8	CO4	[K4]
	b)	Compose spanning tree algorithm and narrate its importance in networking	8	CO1	[K3]
15.	a)	Build a diagram and narrate about electronic mail which includes SMTP, MIME and IMAP	8	CO3	[K3]
	b)	Compare and contrast CSMA/CD– CSMA/CA	8	CO2	[K4]
16.	a)	Inspect stop and wait protocol in reliable communication and how the following terminologies are interrelated with one another? I. Propagation Delay (PD) II. Round Trip Time(RTT) III. Time Out(TO) IV. Time To Live (TTL) Suppose if PD=10, Then calculate RTT, TO and TTT in seconds	16	CO2	[K4]
