

B

1100CST303122101

Pages: 2

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S5 (R, S) / S3 (PT) (R, S) Examination December 2023 (2019 Scheme)

Course Code: CST 303

Course Name: COMPUTER NETWORKS

Max. Marks: 100

Duration: 3 Hours

PART A

(Answer all questions; each question carries 3 marks)

		Marks
1	Differentiate between connection-oriented and connection-less services.	3
2	Define bandwidth-delay product with example.	3
3	Differentiate between 1-persistent and p-persistent CSMA.	3
4	Assuming even parity, find the parity bit for each of the following data: i. 1011010 ii. 000000 iii. 10010001	3
5	Distinguish between routing and forwarding.	3
6	Describe any two techniques for achieving good Quality of Service.	3
7	Write notes on internet multicasting.	3
8	List the IP address ranges and subnet masks of class A, class B and class C.	3
9	List the transport service primitives.	3
10	How recursive query resolution is performed in DNS?	3

PART B

(Answer one full question from each module, each question carries 14 marks)

Module -1

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|----|--|----|
| 11 | a) Write the functions of data link and network layer of OSI reference model. | 4 |
| | b) Explain the various physical topologies with neat sketches. | 10 |
| 12 | a) How computer networks are categorized based on scale? Explain the features of each network. | 8 |
| | b) Differentiate between Manchester encoding and Differential Manchester encoding with suitable example. | 6 |

Module -2

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|----|--|----|
| 13 | a) Explain the various framing methods used in data link layer. | 10 |
| | b) Which are the different types of errors? Explain with examples. | 4 |

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- 14 a) Draw and explain the frame format of IEEE 802.11. 7
b) A bit stream 10011101 is transmitted using the CRC method. The generator polynomial is $x^3 + 1$. Show the actual bit string transmitted. 7

Module -3

- 15 a) Explain distance vector routing algorithm with an example. 8
b) Explain any three closed loop congestion control techniques. 6
16 a) Explain how routing is performed using link state algorithm. Illustrate with an example. 10
b) Write notes on load shedding. 4

Module -4

- 17 a) Illustrate subnetting with an example. 7
b) Draw the IPv6 header. Explain the significance of each field. 7
18 a) Describe the features of BGP. How does BGP avoid count to infinity problem? 9
b) Draw and explain BOOTP message format. 5

Module -5

- 19 a) How does FTP handle file transfer operation? 6
b) What is the significance of SNMP? Describe its components. 8
20 a) Three-way handshake procedure is used to establish a connection in TCP rather than two-way handshake. Justify. 7
b) Describe the working of electronic mail system. 7
