

B

1100CST303122105

Pages: 2

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S5 (S,FE) (FT/WP), (S3 PT) Examination May 2025 (2019 Scheme)

Course Code: CST303

Course Name: COMPUTER NETWORKS

Max. Marks: 100

Duration: 3 Hours

PART A

(Answer all questions; each question carries 3 marks)

Marks

- | | | |
|----|---|---|
| 1 | Describe any three applications of computer networks. | 3 |
| 2 | Mention the relationship of services to protocols with suitable diagram. | 3 |
| 3 | Differentiate asynchronous response mode and asynchronous balanced mode of operation in HDLC. | 3 |
| 4 | Compare Fast Ethernet and Gigabit Ethernet. | 3 |
| 5 | Classify routing algorithms based on the information provided. | 3 |
| 6 | What is Flooding? Write any 3 applications of flooding. | 3 |
| 7 | Identify the range of private addresses used in classful addressing. | 3 |
| 8 | Name one protocol used to translate Logical address to Physical address. Explain its working. | 3 |
| 9 | Identify the service primitives of transport layer. | 3 |
| 10 | List out any three features of World Wide Web. | 3 |

PART B

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

Module -1

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|----|--|---|
| 11 | a) Discuss the design issues of layered architecture. | 7 |
| | b) Compare Twisted pair, Coaxial cable and Optical fibre cable. Write applications of each. | 7 |
| 12 | a) Write short notes on different modes of communication with proper examples. | 6 |
| | b) Name two line coding schemes which provide self-synchronization. Justify your answer. Draw the patterns for the following data: 10101111, 11110000, 00010110 for those line coding schemes. | 8 |

Module -2

- | | | |
|----|---|---|
| 13 | a) Describe 1-bit sliding window protocol with proper diagrams. | 6 |
| | b) Draw and explain Ethernet frame format. | 8 |

- 14 a) Differentiate between Contention based protocols and collision free protocols for medium access. Explain two protocols from each type. 9
- b) How are the hidden station problem and exposed station problem in wireless LANs solved? 5

Module -3

- 15 a) Illustrate Link state Routing with a proper example. 9
- b) How does the Leaky bucket algorithm help to achieve good QoS requirements? Describe how it is implemented. 5
- 16 a) What is meant by congestion control using closed loop solutions? List and explain any two congestion control mechanisms using closed loop approach. 8
- b) Determine the solutions for the duplicate packets produced during flooding. 6

Module -4

- 17 a) Write down the purpose of using ICMP in network layer. What are the message types generated by ICMP? Identify different situations where destination unreachable control messages are generated. 8
- b) Analyze the features of IPv6 addressing compared with IPv4 addressing. 6
- 18 a) Criticize on DHCP protocol and its message format. Compare it with the Bootstrap Protocol. 8
- b) Illustrate on CIDR addressing. An organization is granted with the site address as 201.70.64.0 (class C). The company needs six subnets. Design the subnets. 6

Module -5

- 19 a) Compare the transport layer protocols TCP and UDP. 8
- b) Illustrate any three commands of File Transfer Protocol (FTP). 6
- 20 a) Describe the functional areas of network management system. 7
- b) Discover the different services of Domain Name System (DNS) and identify the reasons for having distributed concept in DNS instead of a centralized one. 7
