

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth Semester B.Tech Degree (S, FE) Examination January 2024 (2015 Scheme)

**Course Code: CS306****Course Name: COMPUTER NETWORKS**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer all questions, each carries 3 marks.*

Marks

- | | | |
|---|--|-----|
| 1 | What are router, subnet and LAN? Show their relationship using a neat diagram. | (3) |
| 2 | What are point to point and broadcast networks? | (3) |
| 3 | List the design issues of layered network software. | (3) |
| 4 | Show the contents of control field of all kinds of frames in HDLC protocol. | (3) |

PART B*Answer any two full questions, each carries 9 marks.*

- | | | |
|---|---|-----|
| 5 | a) With neat diagram explain OSI reference Model. | (6) |
| | b) What are service primitives? Write the service primitives required for a simple connection-oriented service. | (3) |
| 6 | a) Compare GO BACK N and SELECTIVE repeat ARQ. Use necessary diagrams to show the difference. | (6) |
| | b) List the features of Gigabit Ethernet. | (3) |
| 7 | a) Draw and explain the PPP frame format for unnumbered mode operation. | (6) |
| | b) Describe different strategies used in CSMA/CA for collision avoidance. | (3) |

PART C*Answer all questions, each carries 3 marks.*

- | | | |
|----|--|-----|
| 8 | What is flooding? What are the methods used to control flooding? | (3) |
| 9 | Explain count to infinity problem in distance vector routing with an example. | (3) |
| 10 | What is congestion and what can be the causes of congestion? | (3) |
| 11 | Subnet the Class C IP Address 195.1.1.0 so that you have 10 subnets each with a maximum 12 hosts on each subnet. List the Address of host 1 on subnets 0,1,2,3,10. | (3) |

PART D*Answer any two full questions, each carries 9 marks.*

- | | | |
|----|--|-----|
| 12 | a) Write all the steps in distance vector routing algorithm with an example. | (6) |
|----|--|-----|

- b) What are the roles of home agent and foreign agent in the routing of mobile hosts? (3)
- 13 a) Write a note on any three techniques used to achieve good Quality of Service. (6)
- b) What is the need of RIP? Explain it's features. (3)
- 14 a) Draw and explain IPV4 header format. (6)
- b) Explain leaky bucket algorithm with a neat diagram. (3)

PART E

Answer any four full questions, each carries 10 marks.

- 15 a) Compare IPV4 and IPV6. How is the issue of very large IPv6 packets resolved at routers? (5)
- b) Write a note on MIME. (5)
- 16 a) What is the role of ARP in the network layer? Draw the format of ARP packet. (5)
- b) Describe the name-address resolution techniques used in DNS. (5)
- 17 a) Explain how routing is done using BGP. (5)
- b) Draw the TCP header. Explain it's fields. (5)
- 18 a) How does BOOTP perform when the client and the server are on different networks? (5)
- b) Explain the terms socket and port in the TCP service model. Give their importance in computer communication. (5)
- 19 a) List and explain the different types of error reporting messages used by ICMP. (5)
- b) What is the role of SNMP? Explain its components. (5)
- 20 a) Write a note on ICMPv6. (5)
- b) How FTP handles file transfer? (5)
