

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SIXTH SEMESTER B.TECH DEGREE EXAMINATION(S), DECEMBER 2019

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 service primitives in computer networks? | (3) |
| 2 | Differentiate between 1 persistent and p-persistent CSMA. | (3) |
| 3 | Draw the frame format of Ethernet. | (3) |
| 4 | List the features of LAN. | (3) |

PART B

Answer any two full questions, each carries 9 marks.

- | | | |
|---|----------------------------------------------------------------------------------------------------------------------------|-----|
| 5 | a) Explain Stop-and-wait, Go-Back-N and Selective Repeat ARQ techniques. | (6) |
| | b) Differentiate between connection oriented and connectionless services. | (3) |
| 6 | a) How computer networks are categorized based on transmission technology and scale? Explain the features of each network. | (6) |
| | b) Distinguish between bit stuffing and character stuffing in framing. | (3) |
| 7 | a) Explain about the MAC protocol in Ethernet. | (5) |
| | b) With the TCP/IP protocol stack, explain TCP/IP Reference model. | (4) |

PART C

Answer all questions, each carries 3 marks.

- | | | |
|----|------------------------------------------------------------------------------|-----|
| 8 | List the features of RIP. | (3) |
| 9 | List the message types in OSPF. | (3) |
| 10 | What is IP subnetting? Illustrate with example. | (3) |
| 11 | List the IP address ranges and subnet masks of class A, class B and class C. | (3) |

PART D

Answer any two full questions, each carries 9 marks.

- | | | |
|----|------------------------------------------------------------------|-----|
| 12 | a) Illustrate distance vector routing algorithm with an example. | (5) |
| | b) Differentiate classfull and classless addressing schemes | (4) |
| 13 | a) Explain OSPF routing algorithm. | (5) |
| | b) Discuss about any two congestion control algorithms. | (4) |
| 14 | a) How routing is handled in mobile hosts? | (4) |

- b) 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. (5)

PART E

Answer any four full questions, each carries 10 marks.

- 15 a) Draw and explain the message format for the ICMP echo request and echo reply messages. (5)
- b) Explain about the controversies regarding IPv6 (5)
- 16 a) How BOOTP performs when the client and the server are on different networks? (5)
- b) What is multicasting? Mention the role of IGMP in IP multicasting. (5)
- 17 a) How the routing updates are communicated among different Autonomous systems? Give the features of any one Exterior Gateway Protocol. (6)
- b) Draw and explain IPv6 header format. (4)
- 18 a) List the transport layer functions. (3)
- b) Differentiate between TCP and UDP. (7)
- 19 a) How SMTP handles a mail transfer from Alice to Bob? (4)
- b) Give the importance of MIME. What are the different MIME types? (6)
- 20 a) What is the role of SNMP? Explain its components. (7)
- b) Differentiate between DNS query and response messages. (3)
