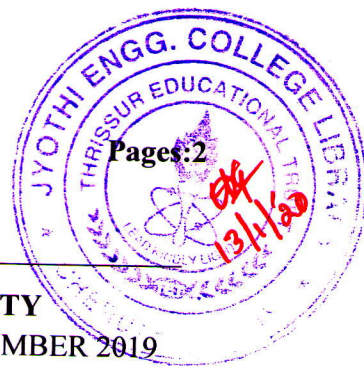


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Reg No.: \_\_\_\_\_

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)

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