

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

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**SEVENTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018**

**Course Code: EC407**

**Course Name: COMPUTER COMMUNICATION**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer any two full questions, each carries 15 marks.*

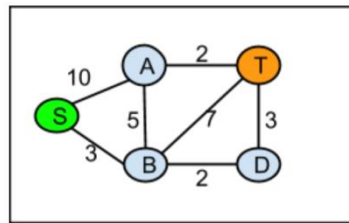
Marks

- 1 a) Compare any three physical topologies used in computer networks. (7)  
b) What is the difference between OSI and TCP/IP models? (8)
- 2 a) Discuss 802.3 MAC frame format. Mention the restrictions imposed on minimum and maximum lengths of 802.3 frame. (2+4)  
b) Explain in details i) stop and wait ARQ (9)  
ii) Go – back – N ARQ  
iii) Selective repeat protocol
- 3 a) What are the different framing methods? Compare and contrast bit stuffing and byte stuffing with frame structures. (4+4)  
b) Explain with flow diagram how collision is avoided in CSMA method. Compare and contrast CSMA/CD with CSMA/CA. (7)

**PART B**

*Answer any two full questions, each carries 15 marks.*

- 4 a) Explain subnetting and supernetting. How do the subnet mask and supernet mask differ from a default mask in classful addressing? (10)  
b) Explain IPv4 and IPv6 datagram formats (5)
- 5 a) Explain RARP and its packet format. (5)  
b) List the classes in classful addressing and give examples for each class. (4+6)  
Also find the netid and the hostid of the following IP addresses:  
a. 114.34.2.8  
b. 132.56.8.6  
c. 208.34.54.12
- 6 a) List the differences between distance vector and link state routing protocols. (5)  
b) Prepare a routing table using the distance vector algorithm to the destination T. (10)  
Also update the table for the link breakage between B and D as shown in figure.



### PART C

*Answer any two full questions, each carries 20 marks.*

- 7 a) Why TCP is called as connection oriented reliable transport layer protocol? (6)  
Discuss.
- b) What are the differences between the services provided by TCP and UDP? (6)
- c) Explain congestion control measures used in the transport layer. (8)
- 8 a) Explain the various methods used in transport layer to overcome the limitations of the network layer. (7)
- b) With the help of diagrams, explain the various scheduling methods to improve the QoS in a network. (7)
- c) Write short notes on i)SNMP ii)POP3 (6)
- 9 a) Discuss in detail the different attacks in data networks. (8)
- b) Explain the various security services provided on the network? (8)
- c) Explain the services provided by SSL protocol. (4)

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**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**SEVENTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019**

**Course Code: EC407**

**Course Name: COMPUTER COMMUNICATION**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer any two full questions, each carries 15 marks.*

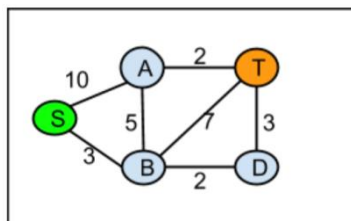
Marks

- |   |    |   |      |
|---|----|---|------|
| 1 | a) | Write in detail how all the layers in OSI model work together for networking. | (10) |
|   | b) | Differentiate circuit switching and packet switching.                         | (5)  |
| 2 | a) | Explain the architecture of IEEE 802.11 with suitable diagram.                | (10) |
|   | b) | Explain how framing is done by data link layer.                               | (5)  |
| 3 | a) | Explain how error control is done in the data link layer. Give an example.    | (8)  |
|   | b) | Explain different flow control mechanisms adopted by data link layer.         | (7)  |

**PART B**

*Answer any two full questions, each carries 15 marks.*

- |   |    |  |      |
|---|----|--|------|
| 4 | a) | Explain classfull and classless addressing   | (5)  |
|   | b) | Describe the functionalities of the network layer. Explain the IP packet format with a neat diagram.                             | (10) |
| 5 | a) | What is routing? Explain its different types.  | (5)  |
|   | b) | Apply Dijkstra's Algorithm to find the shortest path from the source node <b>S</b> to all other nodes in the figure given below: | (10) |



- |   |    |   |      |
|---|----|---|------|
| 6 | a) | What are the problems associated with distance vector protocols. How is it overcome in other routing protocols?   | (5)  |
|   | b) | How can we distinguish a multicast address in IPv4 addressing? How can we do so in IPv6 addressing? With the help of an example, explain the CIDR scheme. | (10) |

**PART C**

*Answer any two full questions, each carries 20 marks.*

- |   |    |   |     |
|---|----|---|-----|
| 7 | a) | Draw the TCP segment header format. Explain the various fields in the TCP | (7) |
|---|----|---|-----|

segment header.

- b) What are the main features of UDP? Explain. (6)
- c) Explain the various congestion control mechanisms to alleviate congestion after it happens. (7)
- 8 a) Explain the services offered by TCP to the processes at the application layer. (5)
- b) With the help of a diagram, explain how users download the email message using POP3. (8)
- c) What is the need of the second layer of defence in a secured network environment? Explain. (7)
- 9 a) Explain the functionality of a) MIME b) SMTP c) HTTP. (6)
- b) Explain the handshake protocol used in SSL. (7)
- c) What is IPSec? Explain the two modes of operation of IPSec. (2+5)

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**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**SEVENTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), DECEMBER 2019**

**Course Code: EC407**

**Course Name: COMPUTER COMMUNICATION**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer any two full questions, each carries 15 marks.*

Marks

- |   |    |   |      |
|---|----|---|------|
| 1 | a) | With a suitable diagram explain the fundamentals of OSI model.    | (10) |
|   | b) | Explain about byte stuffing with example.                         | (5)  |
| 2 | a) | Explain the frame format in HDLC protocol.                        | (8)  |
|   | b) | Explain about TCP/IP protocol suite.                              | (7)  |
| 3 | a) | Explain about simplex, half duplex and full duplex communication. | (3)  |
|   | b) | Explain how collision is handled in CSMA/CD.                      | (8)  |
|   | c) | Compare circuit switching and packet switching.                   | (4)  |

**PART B**

*Answer any two full questions, each carries 15 marks.*

- |   |    |   |     |
|---|----|---|-----|
| 4 | a) | Explain about ICMP. How is error reporting possible in ICMP.  | (8) |
|   | b) | Explain the forwarding of packet in network layer.  | (7) |
| 5 | a) | Explain subnetting and super netting. How do the subnet mask and supernet mask differ from a default mask in classful addressing? | (8) |
|   | b) | Explain Link State Routing using Dijkstras algorithm with an example.   | (7) |
| 6 | a) | What is VLAN? Explain its configurations.   | (8) |
|   | b) | Explain Routing Information Protocol with an example.   | (7) |

**PART C**

*Answer any two full questions, each carries 20 marks.*

- |   |    |  |      |
|---|----|--|------|
| 7 | a) | Explain about open loop and closed loop congestion control mechanisms. | (10) |
|   | b) | Write note on (a) PGP (b) TLS  | (6)  |
|   | c) | Explain about firewall and its types.                                  | (4)  |
| 8 | a) | With necessary diagram explain the features of UDP.                    | (8)  |
|   | b) | Explain the various intrusion detection systems.                       | (6)  |
|   | c) | Explain the TCP segment format.  | (6)  |

- 9 a) Explain any four common attacks in networks. (8)
- b) Explain how Telnet establishes connection to a remote system. (6)
- c) Explain about IPSec and its modes. (6)

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**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**SEVENTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), MARCH 2020**

**Course Code: EC407**

**Course Name: COMPUTER COMMUNICATION**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer any two full questions, each carries 15 marks.*

Marks

- |   |    |  |      |
|---|----|--|------|
| 1 | a) | With a suitable diagram explain the fundamentals of TCP/IP protocol Suite. | (8)  |
|   | b) | Explain about (a) Coaxial cable (b) Fibre optic cable.                     | (7)  |
| 2 | a) | Explain the error detection using CRC.                                     | (8)  |
|   | b) | Explain about the MAC sub layers defined by IEEE 802.11                    | (7)  |
| 3 | a) | Explain how collision is avoided in CSMA/CA.                               | (10) |
|   | b) | Explain about star and bus topologies.                                     | (5)  |

**PART B**

*Answer any two full questions, each carries 15 marks.*

- |   |    |   |      |
|---|----|---|------|
| 4 | a) | Explain the functionalities of network layer and IP packet format.      | (10) |
|   | b) | Explain the forwarding of packet in network layer.                      | (5)  |
| 5 | a) | Explain the formation of shortest path tree using Dijkstra's Algorithm. | (10) |
|   | b) | Explain about classful and classless addressing.                        | (5)  |
| 6 | a) | What is VLAN? Explain its configurations.                               | (7)  |
|   | b) | Explain how Link State Routing is implemented in OSPF protocol.         | (8)  |

**PART C**

*Answer any two full questions, each carries 20 marks.*

- |   |    |   |     |
|---|----|---|-----|
| 7 | a) | Explain about TCP segment format.                                   | (8) |
|   | b) | Explain how DMZ helps in network security.                          | (6) |
|   | c) | Explain about SNMP.   | (6) |
| 8 | a) | Discuss how IPSec secures network layer communication.              | (8) |
|   | b) | Explain the various intrusion detection systems.                    | (6) |
|   | c) | Explain about (a) PGP (b) SSL                                       | (6) |
| 9 | a) | Explain congestion control measures implemented in transport layer. | (8) |
|   | b) | Explain the architecture of WWW.                                    | (6) |
|   | c) | Explain about SMTP.   | (6) |

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Seventh semester B.Tech examinations (S), September 2020

**Course Code: EC407****Course Name: COMPUTER COMMUNICATION**

Max. Marks: 100

Duration: 3 Hours

**PART A***Answer any two full questions, each carries 15 marks.*

Marks

- |   |  |      |
|---|--|------|
| 1 | a) Compare the different physical topologies.                    | (5)  |
|   | b) Explain TCP/IP protocol suite.                                | (10) |
| 2 | a) Describe the functions of all the layers of OSI model.        | (7)  |
|   | b) Describe the persistent methods in CSMA.                      | (4)  |
|   | c) List out the functions of data link layer.                    | (4)  |
| 3 | a) Explain the architecture of IEEE 802.11 with suitable diagram | (10) |
|   | b) Explain the Checksum method of error detection.               | (5)  |

**PART B***Answer any two full questions, each carries 15 marks.*

- |   |   |      |
|---|---|------|
| 4 | a) Explain the different networking devices.  | (7)  |
|   | b) Draw the general format of ICMP messages. Explain error-reporting ICMP           | (8)  |
| 5 | a) Define routing table. Differentiate static and dynamic routing table.            | (5)  |
|   | b) Explain Dijkstra's algorithm to find the shortest path, with a suitable example. | (10) |
| 6 | a) Explain Network Address Translation.   | (7)  |
|   | b) Explain the Routing table modification in Distance Vector Routing.               | (8)  |

**PART C***Answer any two full questions, each carries 20 marks.*

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|---|--|------|
| 7 | a) Explain the protocol used for network management.                       | (8)  |
|   | b) Describe WWW architecture.  | (8)  |
|   | c) Explain POP3.   | (4)  |
| 8 | a) What is Intrusion Detection System? Explain the types of IDS.           | (10) |
|   | b) Explain the three-way handshaking connection establishment mechanism in | (7)  |
|   | c) List out the congestion control categories.                             | (3)  |
| 9 | a) Explain AH protocol.  | (7)  |
|   | b) Describe the four SSL protocols.  | (8)  |
|   | c) List out the services provided by IPsec.                                | (5)  |

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