

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

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

**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.*

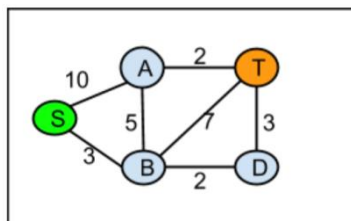
Marks

- |      |   |      |
|------|---|------|
| 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 S 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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