

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

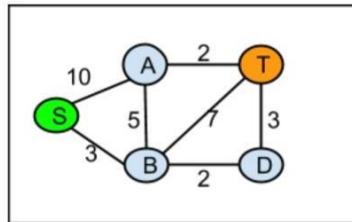
Answer any two full questions, each carries 15 marks.

- | | 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
ii) Go – back – N ARQ
iii) Selective repeat protocol | (9) |
| 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)

Reg No.: _____

Name: _____

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

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PART A

Answer any two full questions, each carries 15 marks.

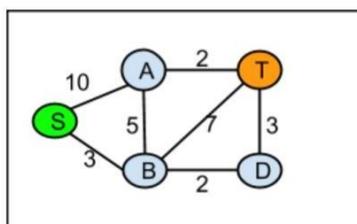
Marks

- | | | | |
|---|----|---|------|
| 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) |

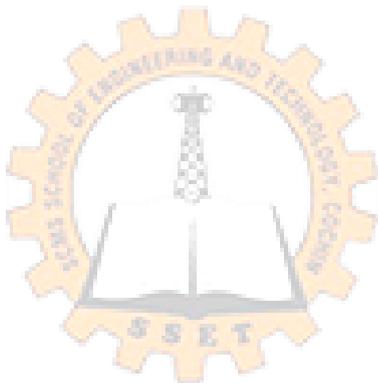
PART C

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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