

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.

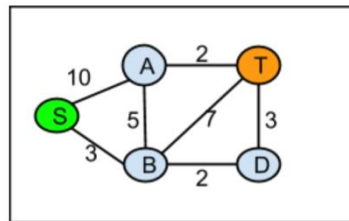
Marks

- | | | | |
|---|----|--|-------|
| 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.

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|---|----|--|-------|
| 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.
Also find the netid and the hostid of the following IP addresses: | (4+6) |
| | 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.
Also update the table for the link breakage between B and D as shown in figure. | (10) |



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 (7)
of the network layer.
- b) With the help of diagrams, explain the various scheduling methods to improve (7)
the QoS in a network.
- 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

Course Code: EC407

Course Name: COMPUTER COMMUNICATION

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

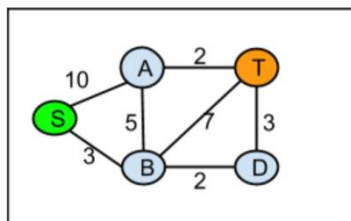
Marks

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

Reg No.: _____

Name: _____

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.

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|---|----|---|-----|
| 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.

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

Reg No.: _____

Name: _____

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.

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|---|----|---|------|
| 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.*

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

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree Examination (Regular and Supplementary), December 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) | Differentiate circuit switching and packet switching. | (5) |
| | b) | Explain the OSI model. | (10) |
| 2 | a) | Explain the various guided media of transmission. | (10) |
| | b) | Draw the frame format in a character-oriented protocol. Also describe byte stuffing and unstuffing. | (5) |
| 3 | a) | Explain stop-and-wait protocol with an example. | (5) |
| | b) | Explain the types of addressing implemented by various layers of TCP/IP protocol suite. | (10) |

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

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|---|----|--|------|
| 4 | a) | Find the class of each address
(1) 00000001 00001011 00001011 1101111
(2) 11000001 10000011 00011011 11111111
(3) 14.23.120.8
(4) 252.5.15.111 | (4) |
| | b) | What is subnetting and supernetting? | (4) |
| | c) | Explain the different types of IPV6 addresses. | (7) |
| 5 | a) | Explain the distance vector routing with an example. | (10) |
| | b) | Explain RIP with a simple example. | (5) |
| 6 | a) | Describe the format of an ARP packet. | (7) |
| | b) | Explain path vector routing implementation in BGP. | (8) |

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

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|---|----|---|------|
| 7 | a) | Explain any one security protocol implemented at the transport layer. | (5) |
| | b) | Describe UDP operation. List the uses of UDP protocol. | (10) |
| | c) | Draw and explain the TCP segment format. | (5) |
| 8 | a) | Explain open-loop and closed-loop congestion control. | (10) |

- b) Explain any two common attacks in computer networks. (5)
- c) Explain the modes of operation of TELNET. (5)
- 9 a) Explain the different modes of operation of IPSec. (7)
- b) Explain the services provided by PGP. (5)
- c) Define firewall. Differentiate packet-filter firewall and proxy firewall. (8)
