

Reg No.: _____

Name: _____

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

Course Code: IT405

Course Name: INTERNETWORKING WITH TCP/IP

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

Marks

- | | | |
|---|---|-----|
| 1 | a) Explain the different methods to migrate from IPv4 to IPv6 | (3) |
| | b) What are the advantages and disadvantages of doing reassembly at the ultimate destination instead of doing it after the datagram travels across one network? | (4) |
| | c) What is a forwarding table? Explain the various fields of a forwarding table. Why does IP software avoid using hardware addresses in a forwarding table? | (8) |
| 2 | a) How does a bridge know whether to forward frames? | (3) |
| | b) Explain the format of ARP message | (4) |
| | c) What is a ping message? How does a ping message help diagnose internet problems? | (5) |
| | d) What are the circumstances under which the ICMP generates destination unreachable message? | (3) |
| 3 | a) What are the functionalities of the network interface layer of TCP/IP protocol suite? | (3) |
| | b) Suppose a system is assigned the address 128.211.168.10/21. Find the first address, last address, and total number of addresses in that block. | (4) |
| | c) Explain the format of UDP messages. How does UDP obtain source IP address for checksum computation? | (8) |

PART B

Answer any two full questions, each carries 15 marks.

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|---|---|-----|
| 4 | a) Explain the adaptive retransmission algorithm used by TCP | (6) |
| | b) What is congestion collapse? | (2) |
| | c) What is IP multicasting? What are the features of IP multicasting? How do you map an IP multicast to Ethernet multicast? | (7) |
| 5 | a) Explain the purposes of BGP open and update messages | (7) |
| | b) What is a label switching router? How does it forward datagrams over an MPLS | (5) |

path?

- c) What are the advantages of packet classification over packet demultiplexing? (3)
- 6 a) What is RIPng? Explain the format of RIPng message (4)
- b) What is explicit congestion notification mechanism? (4)
- c) What is label swapping? (3)
- d) How does a ternary content addressable memory works? (4)

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) What is NAT? What information does NAT place in the translation table? (5)
- b) What is RTP? Explain the format of RTP header. (5)
- c) What are the limitations of SDR? (5)
- d) What are the uses of a flow table in an openflow switch? (5)
- 8 a) Explain the weaknesses of the mobile IP scheme in detail (10)
- b) What is software defined networking? How does it overcome the weakness of connection oriented networks and routing overlays? (5)
- c) How do the SDN controllers communicate with each other? (5)
- 9 a) What is DHCP? Explain the lease renewal states and the transitions among them (10)
- b) What is an openflow switch? (5)
- c) How is intra-pipeline communication achieved in an openflow switch? (5)
