

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. (8)
Why does IP software avoid using hardware addresses in a forwarding table?
- 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.

- 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)

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