Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SEVENTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

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)	What are dual stack systems?	(3)
	b)	What are the different refinements of ARP that reduce the amount of network traffic and automate recovery after hardware address changes?	(5)
	c)	What is a software router? What are the data structures used by software router for forwarding packets?	(7)
2	a)	Explain the concept of VLAN and broadcast domains	(4)
	b)	Which fields of IPv4 datagram header are used for fragmentation and reassembly? Explain the use of each field in detail	(4)
	c)	What is the minimum size of an Ethernet frame that carries an IP packet which in turn carries an ICMP packet? What is the maximum size?	(4)
	d)	What are the main motivations to introduce ICMP protocol in the TCP/IP protocol suite?	(3)
3	a)	What is CIDR? What are the advantages of CIDR over classful addressing?	(5)
	b)	What is internetworking?	(2)
	c)	What is the purpose of using a pseudo-header for UDP checksum computation? Explain the format of IPv6 UDP pseudo-header	(8)

PART B

Answer any two full questions, each carries 15 marks.

4	a)	Explain the additive increase multiplicative decrease mechanism used by TCP	(8)
	b)	What is multicast scope? What are the techniques used by IP to control multicast scope?	(7)
5	a)	What are the main reasons for using BGP Keepalive messages?	(5)
	b)	What is random early detection?	(4)
	c)	What are the advantages of combining label switching and IP forwarding?	(6)

6 a) What is slow convergence problem? Explain any two methods that are used to solve this problem (8)

b) Explain reverse path forwarding and truncated reverse path broadcasting (7)

PART C

Answer any two full questions, each carries 20 marks.

7 a) What is NDP? What are the major functions of NDP? (5)

b) Explain the ICMPv6 messages used with NDP (5)

c) List and explain the actions a Type 0 openflow switch takes when a packet matches one of the classification rules (10)

8 a) Which protocol is used by the internet to reserve resources? Explain (5)

b) What is mobile IP? What are the characteristics of mobile IP? (5)

c) How does SDN help a network manager to configure a network device? (5)

d) What are the limitations of openflow technology? (5)

9 a) What is VPN? Explain VPN tunnelling and IP-in-IP encapsulation (6)

b) What is port mapped NAT? Explain with an example (5)

c) What are the similarities between SNMP and SDN? (4)

d) How does openflow specify the communication between a controller and a switch? (5)

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