

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), DECEMBER 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

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|---|--|-----|
| 1 | a) How does IPv6 differ from IPv4? | (2) |
| | b) What is proxy ARP? What are its advantages? | (5) |
| | c) Explain the unified IP forwarding algorithm | (8) |
| 2 | a) What is a loopback address? What is the use of loopback address? | (3) |
| | b) How does IPv6 handle fragmentation of datagrams? | (4) |
| | c) What is ICMP? What are the purposes of using ICMP? Why do the designers restrict ICMP to communicate only with the original source? | (8) |
| 3 | a) What is ZigBee? | (3) |
| | b) What is network MTU? What is the minimum network MTU required to send an IPv4 datagram that contains at least one octet of data? | (4) |
| | c) What is a protocol port? How is port number assigned using dynamic binding? What are the advantages and disadvantages of using protocol ports instead of process identifiers to specify the destination within a machine? | (8) |

PART B

Answer any two full questions, each carries 15 marks.

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|---|--|-----|
| 4 | a) Explain the three-way handshake mechanism used to establish a TCP connection | (5) |
| | b) How does poison reverse help to solve the slow convergence problem? | (3) |
| | c) What is IGMP? Explain IGMP group membership state transitions | (7) |
| 5 | a) What is out of band data? How does TCP handle out of band data? | (4) |
| | b) What are the features of OSPF protocol? | (4) |
| | c) What is MPLS? How can an MPLS label accompany a datagram across a conventional network? | (7) |
| 6 | a) What is BGP? Explain the characteristics of BGP? | (7) |

- b) What is ternary content addressable memory? (4)
- c) What is a VLAN tag? What are its uses? (4)

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) What is jitter? How can a receiver recreate a signal accurately if the network introduces jitter? (5)
- b) What is NAT? How and when is NAT table initialized? (5)
- c) What are routing overlays? (5)
- d) What are the two conceptual parts of a network device? Explain each of them in detail (5)
- 8 a) Draw and explain the state transition diagram of a DHCP client while acquiring an IP address (10)
- b) With a neat diagram, explain the basic SDN architecture (7)
- c) What is software defined radio? (3)
- 9 a) What is a care-of address? Explain the different types of care-of addresses (7)
- b) How does a home agent know the current location of a mobile host? (3)
- c) What are the functionalities provided by version 1.1 openflow switches? Explain them in detail (10)
