

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth Semester B.Tech Degree Regular and Supplementary Examination June 2023 (2019 Scheme)

Course Code: ITT302**Course Name: INTERNETWORKING WITH TCP/IP****Max. Marks: 100****Duration: 3 Hours****PART A***Answer all questions, each carries 3 marks.*

Marks

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| 1 | Illustrate how are networks interconnected to form internetwork? Show the interconnection of at least 3 networks and describe. | (3) |
| 2 | Describe how the hiding of the low-level details of communication helps improve its productivity | (3) |
| 3 | What are the characteristics of a connectionless delivery system? | (3) |
| 4 | Which are the various fields in an IPv4 datagram for dealing fragmentation? Describe each. | (3) |
| 5 | Differentiate between Interior gateway protocols and Exterior gateway protocols. Illustrate both with neat conceptual diagram. | (3) |
| 6 | Draw the format of IPv4 and IPv6 multicast addresses. | (3) |
| 7 | Draw the UDP segment format and describe the fields. | (3) |
| 8 | Write a short note on Overlay Networks. | (3) |
| 9 | Which are the possible actions that a type 0 OpenFlow switch can take? | (3) |
| 10 | Differentiate between Persistent and non-persistent Connections in HTTP. | (3) |

PART B*Answer any one full question from each module, each carries 14 marks.***Module I**

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| 11 | a) Explain the TCP/IP 5-Layer Reference Model, | (10) |
| | b) What is address resolution problem? Describe the different methods with which address resolution can be performed | (4) |

OR

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| 12 | a) What are the properties of the Internet | (3) |
| | b) Draw the ARP message format and describe the fields. | (11) |

Module II

- 13 a) Draw the IPv6 base header format and describe the fields. (10)
b) Draw the general format of an ICMP message and describe the fields. (4)

OR

- 14 a) Explain with neat diagrams how IPv6 system handles fragmentation (10)
b) With a neat diagram, describe how an ICMP message is encapsulated? (4)

Module III

- 15 a) Which are the different types of messages that BGP uses to perform its functions? (2)
b) Draw the format of OSPFv2 Hello Message & Database Description Message and describe the fields. (12)

OR

- 16 a) Describe how an IPv4 & IPv6 multicast address can be mapped to the corresponding Ethernet multicast address? (4)
b) Draw the format of an IPv4 version 2 RIP message and describe the fields. (10)

Module IV

- 17 a) Draw the TCP finite state machine and explain the states and transitions. (14)

OR

- 18 a) Explain how the Network Address Translation system works. Describe how and when is the NAT table initialized? (8)
b) What is label swapping in MPLS network? Illustrate with a suitable example. (6)

Module V

- 19 a) Explain the working of Domain name system (14)

OR

- 20 a) Draw the format of a DHCP message and describe the fields. Which are the different types of address assignments in DHCP system? (14)
