

Reg No.: TCR21MCA-2006

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Second Semester MCA (2 Year) Degree Examination June 2022

Course Code: 20MCA104

Course Name: ADVANCED COMPUTER NETWORKS

Max. Marks: 60

Duration: 3 Hours

**PART A**

*Answer all questions, each carries 3 marks.*

- |   | Marks |
|---|-------|
| 1. What are the reasons for using layered protocol architecture?                          | (3)   |
| 2. Differentiate HTTP persistent and non-persistent communications.                       | (3)   |
| 3. Demonstrate how Stop-and-Wait protocol is used for reliable data transfer.             | (3)   |
| 4. Discuss about three-way handshaking in TCP with suitable diagram.                      | (3)   |
| 5. What are Virtual Circuits? Compare with circuit switched and packet switched networks. | (3)   |
| 6. Explain the features of RIP.   | (3)   |
| 7. Draw and explain IEEE 802.3 Ethernet frame format.                                     | (3)   |
| 8. What is the difference between a Hub and a Switch?                                     | (3)   |
| 9. With a neat diagram explain the architecture of Bluetooth                              | (3)   |
| 10. What is VPN?  | (3)   |

**PART B**

*Answer any one question from each module. Each question carries 6 marks.*

**Module I**

11. What is the relevance of a network protocol architecture? With neat diagram, brief the responsibilities of network support layers in OSI Reference model? (6)

**OR**

12. Discuss with relevant example, the application layer protocol used to retrieve web pages from the Web. (6)

**Module II**

- 13 What is network congestion? Show how the performance of network is affected (6) by congestion? Write about the mechanisms to alleviate congestion after it happens.

**OR**

- ~~14~~ Demonstrate the working of Go-Back-N and Selective Repeat protocols with (6) suitable diagrams.

**Module III**

- ~~15~~ Define routing? Explain the process of Link State Routing with OSPF protocol. (6)

**OR**

- 16 Write short notes on inter-domain routing protocol BGP. (6)

**Module IV**

- ~~17~~ Explain the random access protocol used for collision detection in Ethernet. (6)

**OR**

- ~~18~~ Generate codeword at sender and perform checking of codeword at receiver (6) assuming no error for the dataword 1100 and divisor 1101 using CRC.

**Module V**

- 19 With neat diagram explain the architecture of IEEE 802.11 Wireless LAN. (6)

**OR**

- ~~20~~ Explain SNMP framework for managing devices in the Internet. (6)

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