

**THE KAVERY ENGINEERING COLLEGE**  
(An Autonomous Institution)

M.E DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025

*First Semester*

*Computer Science and Engineering*

PCST2403 - Network Technologies

*Regulations – 2024*

*Duration : 3 Hrs*

*Maximum : 100 Marks*

**PART – A (ANSWER ALL QUESTIONS) (Marks 10\*2=20)**

| <i>Q.No</i> | <i>Questions</i>                                                         | <i>BLT</i> | <i>CO</i> | <i>Marks</i> |
|-------------|--------------------------------------------------------------------------|------------|-----------|--------------|
| 1.          | Difference between a client-server network and a peer-to-peer network.   | L2         | 1         | 2            |
| 2.          | Specify the formula to calculate network throughput with its definition. | L1         | 1         | 2            |
| 3.          | Name any two Bluetooth profiles used for headphones.                     | L1         | 2         | 2            |
| 4.          | What does IEEE stand for? Tell its purpose.                              | L1         | 2         | 2            |
| 5.          | Tell the importance of protocol boosters in 4G networks.                 | L2         | 3         | 2            |
| 6.          | List the Role of C-RAN in 5G Networks.                                   | L1         | 3         | 2            |
| 7.          | List the key characteristics of Software-Defined Networking (SDN).       | L2         | 4         | 2            |
| 8.          | Compare the southbound and northbound interfaces in SDN.                 | L2         | 4         | 2            |
| 9.          | Write down the role of virtual network function manager.                 | L1         | 5         | 2            |
| 10.         | State the concept of network virtualization.                             | L1         | 5         | 2            |

**PART – B (ANSWER ALL QUESTIONS) (Marks 5\*16 = 80)**

| <i>Q.No</i> | <i>Questions</i>                                                                                                                                                                                        | <i>BLT</i> | <i>CO</i> | <i>Marks</i> |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|--------------|
| 11.         | a With the neat diagram, describe the OSI Model in detail, outlining the function of each layer.                                                                                                        | L2         | 1         | 16           |
|             | Or                                                                                                                                                                                                      |            |           |              |
|             | b Illustrate the principles of classful IP addressing and its practical implications in network design.                                                                                                 | L2         | 1         | 16           |
| 12.         | a Describe the evolution of IEEE 802.11 standards, highlighting the key features and advancements of each major iteration from the original 802.11 to the latest developments like 802.11ax and beyond. | L2         | 2         | 16           |
|             | Or                                                                                                                                                                                                      |            |           |              |
|             | b Illustrate how Bluetooth protocol stack facilitates device communication and its significance in various applications.                                                                                | L2         | 2         | 16           |
| 13.         | a Provide an in-depth analysis of the various channel modeling techniques used in 4G networks.                                                                                                          | L2         | 3         | 16           |
|             | Or                                                                                                                                                                                                      |            |           |              |
|             | b Outline the three fundamental techniques of MIMO communication systems and discuss how they enhance the performance of wireless communications.                                                       | L2         | 3         | 16           |

|     |   |                                                                                                                                                                           |    |   |    |
|-----|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---|----|
| 14. | a | Illustrate the complete packet processing pipeline with multiple table implementations in OpenFlow Logical Network Device.                                                | L2 | 4 | 16 |
|     |   | Or                                                                                                                                                                        |    |   |    |
|     | b | Describe the high-level architecture of OpenDaylight, and its purpose in the context of SDN.                                                                              | L2 | 4 | 16 |
| 15. | a | Examine how NFV Infrastructure (NFVI) facilitates the deployment and management of Virtual Network Functions (VNFs).                                                      | L4 | 5 | 16 |
|     |   | Or                                                                                                                                                                        |    |   |    |
|     | b | Analyze the NFV Management and Orchestration (MANO) framework components. Provide examples of how MANO facilitates automated deployment and scaling of network functions. | L4 | 5 | 16 |