Question Paper Code	12171

M.E. / M.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023
Second Semester
M.E. - Computer Science and Engineering
20PCSPC201 - NETWORK DESIGN AND TECHNOLOGIES
(Regulations 2020)

Duration: 3 Hours   Max. Marks: 100

PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

Marks, K-Level, CO

1. Define Fire Wall. List out the characteristics of Firewalls.   *2,K1,CO1*
2. Compare SLIP and PPP.   *2,K2,CO1*
3. Mention the network elements and signaling specifications of UMTS and WLAN.   *2,K1,CO2*
4. What is the functionality of L2CAP at sender and receiver Bluetooth stack?   *2,K1,CO2*
5. How to perform authentication in GSM?   *2,K1,CO3*
6. List three security features used in Bluetooth technology   *2,K1,CO3*
7. Distinguish between GPRS and EDGE.   *2,K2,CO4*
8. Interpret the features of 5G Network technology.   *2,K2,CO4*
9. Define Overlay Network.   *2,K1,CO5*
10. Outline the advantages of VLAN.   *2,K2,CO5*

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11. a) Describe in detail about
    (i) Firewalls and L3 switches .   *7,K2,CO1*
    (ii) Remote access technologies and devices.   *6,K2,CO1*
                          OR
  b) What are the components required for designing a network? Explain.   *13,K2,CO1*

12. a) Discuss in detail about the Mobile WiMAX technologies which improves the performance indices in terms of speed, throughput and capacity.   *13,K2,CO2*
                          OR
  b) (i)Explain in brief about security features adopted in WiMAX.   *7,K2,CO2*

    (ii)How IEEE 802.11 e adopts WMM to cater the demands of multimedia QoS Specifications? What are the major changes made with IEEE 802.11?   *6,K2,CO2*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **12171**

13. a) Explain the network architecture and wireless LAN. *13,K2,CO3*

   OR

   b) Discuss the physical properties, protocol stack layer and security of Bluetooth. *13,K2,CO3*

14. a) Explain the GSM handover schemes and state the reasons for the occurrences. What are the resources need to be allocated during handover for data transmission using GPRS by satisfying QoS *13,K2,CO4*

   OR

   b) Discuss small screen web browsing is done over GPRS and EDGE. *13,K2,CO4*

15. a) (i) Discuss about LTE Security Architecture in detail. *8,K2,CO5*
    (ii) Explain the Mobility Management and power Optimization in LTE. *5,K2,CO5*

   OR

   b) (i) Explain the Functions of Green wireless networks. *5,K2,CO5*
    (ii) Explain the features of 4G and 5G networks. *8,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Discuss a SDN framework with distributed SDN controllers for an application and explain about the flow of control and data packets between the entities in the framework. *15,K2,CO6*

   OR

   b) Discuss about
    (i) Role of SDN controllers and Network Virtualization. *8, K2,CO6*
    (ii) Write notes on network overlays with its features and advantages. *7,K2,CO6*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **12171**