**20CS701/PE**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | |
| **December, 2023** | **Computer Science & Engineering** | | |
| **Seventh Semester** | **Wireless Networks** | | |
| **Time:** Three Hours | | **Maximum:** 70 Marks | |
| ***Answer question 1 compulsory.*** | | | **(14X1 = 14Marks)** |
| ***Answer one question from each unit.*** | | | **(4X14=56 Marks)** |
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|  |  |  | CO | BL | M |
| 1 | a) | Why collision detection is difficult in wireless network? | CO1 | L1 | 1M |
|  | b) | List the advantages of Cellular systems. | CO1 | L4 | 1M |
|  | c) | Define near and far terminal problem. | CO1 | L1 | 1M |
|  | d) | Define multiplexing. | CO1 | L1 | 1M |
|  | e) | Define modulation. | CO1 | L1 | 1M |
|  | f) | List the signal propagation effects. | CO1 | L4 | 1M |
|  | g) | List the Applications of satellite systems. | CO2 | L4 | 1M |
|  | h) | What is the role of VLR entity in GSM network? | CO2 | L1 | 1M |
|  | i) | Define COA (Care of address) in mobile IP. | CO3 | L1 | 1M |
|  | j) | List the advantages of Mobile Ad-hoc Networks. | CO3 | L1 | 1M |
|  | k) | Define ESS (Extended Service Set). | CO3 | L1 | 1M |
|  | l) | Compare infrastructure-based wireless network and ad-hoc wireless network. | CO3 | L2 | 1M |
|  | m) | List the features of LTE to beyond 4G. | CO4 | L4 | 1M |
|  | n) | List the features of LTE-A to beyond 4G. | CO4 | L4 | 1M |
| **Unit-I** | | | | | |
| 2 | a) | Explain about Hidden and Exposed terminal problems in wireless environments. | CO1 | L2 | 7M |
|  | b) | Explain about transmitter and receiver structures of Frequency Hopping Spread Spectrum and Direct Sequence Spread Spectrum in detail. | CO1 | L2 | 7M |
| **(OR)** | | | | | |
| 3 | a) | Discuss about Multiple Access with Collision Avoidance. | CO1 | L6 | 7M |
|  | b) | Explain about frequency division multiplexing and time division multiplexing. | CO1 | L2 | 7M |
| **Unit-II** | | | | | |
| 4 | a) | What are the basic reasons for handover in GSM? Explain about the types of handovers in GSM with neat diagram(s). | CO2 | L1 | 8M |
|  | b) | Discuss about the steps involved in a mobile terminated call in GSM with neat sketch. | CO2 | L6 | 6M |
| **(OR)** | | | | | |
| 5 | a) | Explain about frame hierarchy of DECT. | CO2 | L2 | 8M |
|  | b) | Explain about any two satellite orbits along with their advantages and disadvantages. | CO2 | L2 | 6M |
| **Unit-III** | | | | | |
| 6 | a) | Explain about IEEE 802.11 DFWMAC-DCF with RTS/CTS. | CO3 | L2 | 8M |
|  | b) | Explain about IEEE 802.11 MAC frame format. | CO3 | L2 | 6M |
| **(OR)** | | | | | |
| 7 | a) | How to carry encapsulated packet by home agent and foreign agent through tunnelling? Explain different types of encapsulations with IP packet. | CO3 | L4 | 10M |
|  | b) | Describe how priorities are defined according to IEEE 802.11 MAC logic? Define and explain the usage? | CO3 | L2 | 4M |
| **Unit-IV** | | | | | |
| 8 |  | Explain about Network architecture of 4G. | CO4 | L4 | 14M |
| **(OR)** | | | | | |
| 9 |  | Illustrate about 10 Pillers of 5G. | CO4 | L2 | 14M |

