**18CS702**

**Hall Ticket Number:**

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| **IV/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | |
| **November, 2022** | **Computer Science & Engineering** | | |
| **Seventh Semester** | **Wireless Networks** | | |
| **Time:** Three Hours | | **Maximum:** 50 Marks | |
| *Answer Question No.1 compulsorily.* | | | (10X1 = 10 Marks) |
| *Answer ONE question from each unit.* | | | (4X10=40 Marks) |
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| 1 | a) | What is meant by spread spectrum? | CO1 | L1 |  |
|  | b) | List out any 2 features of FDMA. | CO1 | L2 |  |
|  | c) | List applications of Wireless networks. | CO1 | L4 |  |
|  | d) | What is handover? | CO2 | L3 |  |
|  | e) | Define wireless LAN | CO2 | L2 |  |
|  | f) | What is meant by mobile IP? | CO2 | L1 |  |
|  | g) | Differentiate Infra-red and Radio transmission. | CO3 | L3 |  |
|  | h) | What led to the development of Indirect TCP? | CO3 | L1 |  |
|  | i) | What are all the various flavours of TCP available? | CO4 | L4 |  |
|  | j) | Outline the challenging issues in ad hoc network maintenance. | CO4 | L1 |  |
|  | | **Unit -I** | | | |
| 2 | a) | Explain about the historical background of Wireless Communications | CO1 | L2 | 5M |
|  | b) | Discuss in detail about spread spectrum techniques | CO1 | L1 | 5M |
|  | | **(OR)** | | | |
| 3 | a) | What is modulation? Explain ASK with neat diagrams? | CO1 | L3 | 5M |
|  | b) | Compare FDMA,TDMA | CO1 | L1 | 5M |
|  | | **Unit -II** | | | |
| 4 | a) | Explain in detail about mobile services defined by GSM. | CO2 | L4 | 5M |
|  | b) | Explain the following satellite applications. i. GPS. ii. Satellite Navigational system. | CO2 | L2 | 5M |
|  | | **(OR)** | | | |
| 5 |  | What is GSM and explain the architecture of GSM System. | CO2 | L3 | 10M |
|  | | **Unit -III** | | | |
| 6 | a) | Briefly explain about the system and protocol architecture of 802.11. | CO3 | L1 | 5M |
|  | b) | Explain in detail the Dynamic host configuration protocol. | CO3 | L2 | 5M |
|  | | **(OR)** | | | |
| 7 |  | State the entities and terminologies used in Mobile IP along with tunneling and also explain the three types of encapsulation mechanisms used in mobile IP. | CO3 | L1 | 10M |
|  | | **Unit -IV** | | | |
| 8 | a) | Discuss the architecture of wireless application protocol | CO4 | L1 | 5M |
|  | b) | Write short notes on time-out freezing and selective re-transmission | CO4 | L1 | 5M |
|  | | **(OR)** | | | |
| 9 | a) | Explain the traditional TCP .What are the improvements that are made into the classical TCP? | CO4 | L2 | 5M |
|  | b) | Write about (i) Wireless Transport Layer Security (ii) Wireless Session protocol | CO4 | L3 | 5M |

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**Scheme**

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| a) | What is meant by spread spectrum?  **Definition** |
| b) | List out any 2 features of FDMA.  **Any 2 features** |
| c) | Draw UMTS core network architecture.  **Daigram** |
| d) | What is handover?  **Definition** |
| e) | Define wireless LAN  **Definition** |
| f) | What is meant by mobile IP?  **Definition** |
| g) | Differentiate Infra-red and Radio transmission.  **Any 2 differences** |
| h) | What led to the development of Indirect TCP?  Importance |
| i) | What are all the various flavours of TCP available?  **Features** |
| j) | Outline the challenging issues in ad hoc network maintenance.  **Any 2 issues** |

**Unit –I**

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| 2. | a) | Explain about the historical background of Wireless Communications  **Evolution -5M** |
|  | b) | Discuss in detail about spread spectrum techniques  **Definition -2M spread spectrum techniques -3M** |

**OR**

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| 3. | a) | What is modulation? Explain ASK with neat diagrams?  **Definition -1M ASK Definition -1M diagrams-1.5M Explanation-1.5M** |
|  | b) | Compare FDMA,TDMA  **Any 5 Comparison** |

**Unit –II**

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| 4. | a) | Analyze the three main entities of the UMTS network. Discuss their functions?  **Entities-2M functions-3M** |
|  | b) | Explain the following satellite applications. i. GPS. ii. Satellite Navigational system.  **GPS -3M Satellite Navigational system-2M** |

**OR**

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| 5. | a) | What is GSM and explain the architecture of GSM System.  **Definition -1M diagrams-2M Explanation-2M** |
|  | b) | How UMTS provides backward compatibility with GSM.  **Explanation-5M** |

**Unit –III**

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| 6. | a) | Briefly explain about the system and protocol architecture of 802.11.  **Architecture -3M Explanation-2M** |
|  | b) | Explain in detail the Dynamic host configuration protocol.  **Explanation-5M** |

**OR**

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| 7. | a) | State the entities and terminologies used in Mobile IP along with tunneling and also explain the three types of encapsulation mechanisms used in mobile IP.  **entities and terminologies -2M Explanation-3M** |
|  | b) | Explain the MAC management sublayers of IEEE 802.11.  **Explanation-5M** |

**Unit –IV**

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| 8. | a) | Discuss the architecture of wireless application protocol  **Architecture -3M Explanation-2M** |
|  | b) | Write short notes on time-out freezing and selective re-transmission  **time-out freezing- 3M selective re-transmission -2M** |

**OR**

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| 9. | a) | Explain the traditional TCP .What are the improvements that are made into the classical TCP?  **Definition -1M improvements-4M** |
|  | b) | Write about (i) Transport Layer Security (ii) Wireless Session protocol  **Transport Layer Security -3M Wireless Session protocol-2M** |