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**PRESIDENCY UNIVERSITY**

**Bengaluru**

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| **End - Term Examinations – JANUARY 2025** |
| **Date:** 09 – 01- 2025 **Time:** 09:30 am – 12:30 pm |

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| **School:** SOE | **Program:** B. Tech ECE | |
| **Course Code:** ECE3060 | **Course Name:** Wireless Ad hoc networks | |
| **Semester**: VII | **Max Marks**:100 | **Weightage**: 50% |

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| **CO - Levels** | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** |
| **Marks** | **20** | **30** | **50** | **-** | **-** |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Do not write anything on the question paper other than roll number.*

**Part A**

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| **Answer ALL the Questions. Each question carries 2marks. 10Q x 2M=20M** | | | | |
| **1** | What is an ad hoc network and Why ad hoc networks are needed? | **2 Marks** | **L1** | **CO1** |
| **2** | List any 4 open-source network simulators for the simulation of Mobile ad hoc networks. | **2 Marks** | **L1** | **CO1** |
| **3** | What does LEO and MEO stand for? And what is the approximate distance between Earth and LEO, MEO. | **2 Marks** | **L1** | **CO1** |
| **4** | Give any 4 differences between Proactive and Reactive routing protocols. | **2 Marks** | **L2** | **CO2** |
| **5** | Give the major objectives of the transport layer protocol. | **2 Marks** | **L2** | **CO2** |
| **6** | What do you mean by passive attacks? | **2 Marks** | **L2** | **CO2** |
| **7** | Define Denial of attack. | **2 Marks** | **L3** | **CO3** |
| **8** | List the issues and challenges in security provisioning of transport layer. | **2 Marks** | **L3** | **CO3** |
| **9** | Define Wormhole attack. | **2 Marks** | **L3** | **CO3** |
| **10** | What are the issues in designing transport layer protocol? | **2 Marks** | **L3** | **CO3** |

**Part B**

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| **Answer the Questions Total 80 Marks** | | | | | |
| **11.** |  | Busy tone signal is used to prevent multiple terminals from accessing a channel at the same time. What are the disadvantages of the BMTA protocol? How are they over come in the DBTMA protocol? | **10**  **Marks** | **L1** | **CO1** |
| **or** | | | | | |
| **12.** |  | The data link layer of the OSI model is responsible for synchronizing data packets. How is synchronization between nodes achieved in HRMA protocol? | **10**  **Marks** | **L1** | **CO1** |
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| **13.** |  | Link state routing protocol finds the best path for data packets to travel from their origin to their destination. Explain Optimized Link state routing protocol with its advantages and disadvantages. | **10**  **Marks** | **L2** | **CO2** |
| **or** | | | | | |
| **14.** |  | In the CGSR protocol the resources of the node chosen as cluster head get drained very quickly, more rapidly than the other nodes in the cluster; How can this problem be overcome and how is the cluster-head selected in CGSR protocol? | **10**  **Marks** | **L2** | **CO2** |

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| **15.** |  | For the topology given in figure, Use Zone based Hierarchical link state routing (ZHLS) routing protocol to find the Zone Link State packets and zone level topology for the various zones marked. | **10**  **Marks** | **L2** | **CO2** |
| **Or** | | | | | |
| **16.** |  | A routing protocol specifies how routers communicate with each other to distribute information that enables them to select paths between nodes. Explain in detail with an example Hierarchical state routing protocol. | **10**  **Marks** | **L2** | **CO2** |

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| **17.** |  | The transport layer provides a flow control mechanism between the adjacent layers of the TCP/IP model. Explain the issues in designing a transport layer protocol for ad hoc wireless networks. | **15**  **Marks** | **L3** | **CO3** |
| **Or** | | | | | |
| **18.** |  | A fisheye lens is an ultra-wide-angle lens that produces wide panoramic image. For the network shown in figure 2, Determine the fisheye routing table for nodes 7 and 5. | **15**  **Marks** | **L3** | **CO3** |

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| **19.** |  | The transport layer is a conceptual division of methods in the layered architecture of protocols. List and brief various network and transport layer attacks in detail. | **15**  **Marks** | **L3** | **CO3** |
| **Or** | | | | | |
| **20.** |  | Transmission Control Protocol (TCP) is a communications protocol that ensures data is delivered correctly between devices over a network. Explain feedback-based TCP and TCP BUS in detail. | **15**  **Marks** | **L3** | **CO3** |

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| **21.** |  | An application layer is an abstraction layer that specifies the shared communication protocols and interface methods used by hosts in a communications network. Explain various network and application layer security attacks in detail. | **20**  **Marks** | **L3** | **CO3** |
| **Or** | | | | | |
| **22.** |  | Ad hoc TCP incorporates strategies to deal with mobility, low bandwidth, high packet loss rates, energy efficiency, and changing topology. Explain Ad hoc TCP and Split TCP in detail. | **20**  **Marks** | **L3** | **CO3** |

**\*\*\*\*\* BEST WISHES \*\*\*\*\***