# INSTITUTE OF AERONAUTICAL ENGINEERING

**(AUTONOMOUS)**

Code No: **BESB14**

**MODEL QUESTION PAPER - II**

M-Tech II Semester Regular Examinations, February 2019

**EMBEDDED WIRELESS SENSOR NETWORK**

(Embedded Systems)

Time: 3 hours Max. Marks: 70

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

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UNIT I

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|---|---|---|---|
| 1. | (a) | Write about operational states of sensor node. | [7M] |
| | (b) | Show various mechanisms which form a typical part of WSN. | [7M] |
| 2. | (a) | Explain the various challenges and potential applications of wireless sensor networks. | [7M] |
| | (b) | Illustrate in detail about the various hardware components and their composition into functioning node of WSN. | [7M] |

UNIT II

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|---|---|---|---|
| 3. | (a) | What is WSN tunneling? | [7M] |
| | (b) | Explain the concept of gateway with different scenarios in WSN. | [7M] |
| 4. | (a) | Discuss about the power source of a sensor node. | [7M] |
| | (b) | Explain steps in detail to develop a wireless sensor network. | [7M] |

UNIT III

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|---|---|---|---|
| 5. | (a) | What role does the Split Control interface play in Tiny OS? | [7M] |
| | (b) | Write a simple application to continually increment a counter value and send to another mote where the process is repeated. | [7M] |
| 6. | (a) | What is an event-driven programming, and why is it critical for sensor network programming? | [7M] |
| | (b) | What issues arise when atomic blocks are improperly used? | [7M] |

UNIT IV

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|---|---|---|---|
| 7. | (a) | Discuss about group based approach. | [7M] |
| | (b) | Explain embedded WiSeNts. | [7M] |
| 8. | (a) | Briefly explain system architecture. | [7M] |
| | (b) | Explain programming models requirements and its state of art. | [7M] |

UNIT V

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|---|---|---|---|
| 9. | (a) | How do you create and maintain a list of active devices that are connected to WSN. | [7M] |
| | (b) | Write a case study for environmental monitoring in WSN. | [7M] |
| 10. | (a) | Describe data aggregation and the concept of tree data structures. | [7M] |
| | (b) | Write a case study for inter vehicle communication. | [7M] |