Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **16EC2003** | **Duration :** | **3hrs** |
| **Sub. Name :** | **RECENT TRENDS IN WIRELESS COMMUNICATION** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Label the elements of a wireless communication system. Show its operation. | CO1 | 10 |
| b. | With a neat diagram explain the functional architecture of Sensor Networks. | CO1 | 10 |
| **(OR)** | | | | |
| 2. | a. | Infer how Adaptive Listening reduces the latency in S-MAC. | CO1 | 10 |
| b. | Consider 3 nodes N1, N2, N3 in a virtual cluster. If N2 goes to sleep and N3 transmits data to N1, explain this co-ordinated sleeping scenario of S-MAC with proper illustration. | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Select a suitable network for animal habitat monitoring. Recommend how it can be operated. | CO1 | 10 |
| b. | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Node | A | B | C | D | E | F | | Power Available (PA) | 1 | 2 | 4 | 2 | 3 | 2 |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Link ( ***i***) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | Energy Requiredαi | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 2 | 1 |   For the above network,  i) Find the possible routes between the source and the sink.  ii) Find the maximum available power route.  iii) Find the minimum energy route.  iv) Find the minimum hop route. | CO1 | 10 |
| **(OR)** | | | | |
| 4. | a. | Examine the working of Berkely Mote. | CO1 | 10 |
| b. | Summarize the issues in Routing Protocols used in Sensor Network. | CO1 | 10 |
|  |  |  |  |  |
| 5. | a. | Compare RFID with BARCODE. | CO2 | 10 |
| b. | In a connected car, list the sensor positions and the corresponding features that are monitored through IoT. | CO2 | 10 |
| **(OR)** | | | | |
| 6. | a. | Describe the Big data stores and decision support tools in IoT. | CO2 | 10 |
| b. | Identify the applications and challenges of ubiquitous computing. | CO2 | 10 |
|  |  |  |  |  |
| 7. | a. | Outline the details of Smart Santander project. | CO2 | 10 |
| b. | Contrast traditional radio receiver with SDR receiver. | CO3 | 10 |
| **(OR)** | | | | |
| 8. | a. | IoT architecture consists of hardware and software. Interpret the significance of both. | CO2 | 10 |
| b. | Compare the three paradigms that are used to facilitate spectrum sharing. | CO3 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Show the significance of spectrum hole with suitable diagram. | CO3 | 5 |
| b. | Explain the three possible spectrum sensing approaches. | CO3 | 15 |