

**B. TECH. SEM -VII (E & TC ENGG.) (2014 COURSE) (CBCS) :**  
**WINTER - 2017**  
**SUBJECT: WIRELESS SENSOR NETWORK**

Day : Monday  
Date : 22/01/2018

Time : 02.30 PM TO 05.30 PM  
Max. Marks: 60

**W-2017-2340**

**N. B. :**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use of non-programmable calculator is **ALLOWED**.
- 4) Assume suitable data if necessary.

**Q. 1** How multi-hop network provides significant energy saving over a single –hop network? Explain it with equations (10)

**OR**

Explain the following terms with respect to wireless sensor network (10)

- |                             |           |
|-----------------------------|-----------|
| a) Routing                  | d) Sensor |
| b) Data-centric             | e) State  |
| c) Collaborative processing |           |

**Q. 2** Explain the following terms with respect to tracking scenario with diagrams: (10)

- |                             |                  |
|-----------------------------|------------------|
| a) Discovery                | d) Communication |
| b) Collaborative processing | e) Reporting     |
| c) Query processing         |                  |

**OR**

What are the distribution representations? Explain each in brief. (10)

**Q. 3** Explain the following terms with respect to MAC Protocol: (10)

- |                   |                                      |
|-------------------|--------------------------------------|
| a) S-Mac Protocol | b) IEEE 802.15.4 standard and Zigbee |
|-------------------|--------------------------------------|

**OR**

Explain the directed diffusion algorithm with necessary diagram? (10)

**Q. 4** Define critical transmitting range problem. How to rectify the problem? (10)

**OR**

Explain the following terms with respect to time synchronization: (10)

- |                     |                 |
|---------------------|-----------------|
| a) Send Time        | d) Receive time |
| b) Access time      | e) Drift        |
| c) Propagation time |                 |

**Q. 5** What are the parameters taken in account for task-driven sensing? (10)

**OR**

Differentiate between Task driven and Information based sensor tasking. (10)

**Q. 6** What are the challenges for sensor network database? (10)

**OR**

Define Cougar sensor data base? Explain its importance. (10)

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