

B. TECH. SEM -VII (E & TC ENGG.) (2014 COURSE) (CBCS) :

SUMMER - 2018

SUBJECT: WIRELESS SENSOR NETWORK

Day : **Friday**
Date : **25/05/2018**

S-2018-2545

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

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 denser field improves the odds of detecting a signal within the range? (10)
Explain it with equations.

OR

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

- | | |
|-------------------------|------------------------------|
| a) Uncertainty | d) Localization and Tracking |
| b) Geographical Routing | e) Sensor tasking |
| c) Resource | |

Q. 2 What are the notations used in formulation of a tracking problem in a WSN? (10)

OR

Why tracking multiple targets over a geographical region is significantly more challenging than tracking single target. (10)

Q. 3 Explain the following terms with respect to parameter routing: (10)

- | | |
|-----------------------|-------------------------------|
| a) Other face routing | d) Convex parameter routing |
| b) Spanner | e) Adaptive parameter routing |
| c) Stretch factor | |

OR

List down the several characteristics of WSN which points to the need for a specialized MAC protocol. (10)

Q. 4 Why clustering is needed in a sensor network? List down the reasons. (10)

OR

What are the ranging techniques and explain each with their importance. (10)

Q. 5 What are the parameters taken in account for sensor selection? (10)

OR

Explain Mahalanbis distance? (10)

Q. 6 Write down a SQL query for floor warning system for WSN? Use city Pune. (10)

OR

Explain the following terms with respect to WSN for general data base system: (10)

- | | |
|-----------------------|------------------------------|
| a) Network usage | d) Storage space requirement |
| b) Preprocessing time | e) Throughput |
| c) Query time | |

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