

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: MTECH
BRANCH: ECE**

**SEMESTER : I
SESSION : MO/19**

SUBJECT: EC515 WIRELESS ADHOC AND SENSOR NETWORK

TIME: 3.00Hrs.

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) Discuss the challenges of a wireless adhoc network and also elaborate its similarities as well dissimilarities with a wireless sensor network. [5]
- Q.1(b) What are the main components of a sensor node? Discuss its role and limitations. [5]
- Q.2(a) Name any three operating systems utilized in WSN and elaborate its characteristics. [5]
- Q.2(b) Discuss various optimization goals and figure of merits in sensor network design. [5]
- Q.3(a) What are the types of medium access techniques used for wireless sensor network? Explain them with their advantages and disadvantages. [5]
- Q.3(b) Why is the IEEE 802.15.4 standard preferable over the IEEE 802.11 or Bluetooth standard for most wireless sensor networks? [5]
- Q.4(a) How a reactive routing protocol is different from a proactive routing protocol? Name at least two examples of each category. [5]
- Q.4(b) Explain the hidden-terminal problem and the exposed-terminal problem. How it can be avoided? [5]
- Q.5(a) Discuss the distance estimation techniques in sensor localization. [5]
- Q.5(b) Explain trilateration method to determine a device location. How multilateration method is useful for avoiding the limitations of trilateration method? [5]

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