

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -I EXAMINATION- 2018

B.Tech. (IT), 8th Semester

COURSE CODE: 15B1WC1831

MAX. MARKS: 15

COURSE NAME: Wireless Sensor Networks- Protocols and Applications

COURSE CREDITS: 3

MAX. TIME: 1 HR

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q.1. (a) How WSN is used in Precision Agriculture? List out the common challenges and design constraints in context to the Wireless Sensor Networks (WSNS). [2 Marks]

(b) What is the difference between the passive sensor and active sensors and can you name few examples for each category ? [1 Mark]

Q.2. (a) Illustrate the Process of Data Acquisition and Actuation in Wireless Sensor Networks (WSNS) with the help of suitable figure. [2 Marks]

(b) Name at-least four techniques to reduce the power consumption in wireless sensor networks. [1 Mark]

Q.3. Write down the applications of wireless sensor networks in context to the following;

- (i) Medicine and health care
- (ii) Machine surveillance and preventive maintenance
- (iii) Environment control and biodiversity mapping

[3 Marks]

Q.4 Differentiate between the following;

- (i) Mobile ad hoc networks and wireless sensor networks
- (ii) Fieldbuses and wireless sensor networks

[3 Marks]

Q.5 (a) How do we model the **energy consumption during reception** in wireless sensor networks ? Write down the formula for the energy E_{rcvd} required to receive a packet in WSN.

[2 Marks]

(b) Why TinyOS is more suitable for WSN? List out at least three simulation tools used for WSN. [1 Marks]