

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -II EXAMINATION- 2024

B.Tech-VIII Semester (ECE)

COURSE CODE(CREDITS):18B1WEC843 (3)

MAX. MARKS: 25

COURSE NAME: INDUSTRIAL IoT

COURSE INSTRUCTORS: MUNISH SOOD

MAX. TIME: 1.5 Hour

Note: (a) All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

(c) The candidate is required to make suitable numeric assumptions wherever required for solving problems

Q1) a) What is the difference between an Adhoc network and an Infrastructure Network.

b) What is the difference between a Basic Service Set and an Extended Service Set?

c) What is the access method used by wireless LANs?

d) What is the purpose of the Network Allocation Vector (NAV)?

[4] CO-3

Q2) What is hidden station and exposed station problem in Adhoc and Infrastructure based IoT networks. How this problem is solved?

[4] CO-3

Q3) How does CDMA work ? Explain its working with the use of orthogonal Walsh codes.

[3] CO-4

Q4) a) What is the ISM band used in IoT based devices?

b) What are the advantages of LR-WPAN?

c) What are the options specified in the original IEEE 802.15.4-2003 for IoT devices.

d) What is the modulation technique used in IEEE 802.15.4-2003 and why it is used?

[4] CO-4

Q5) a) Explain in detail about the Frame Control Field (in MAC header) used in IEEE 802.3.

b) What is Distributed Coordination Function (DCF) and Point Coordination Function (PCF) used in IEEE 802.11 defined in MAC sub-layers. **[4] CO-4**

Q6) a) What is Bluetooth Low Energy (BLE), where it is used ? **[3] CO3**

b) What is the architecture used in BLE ? Explain the frames used in BLE.

c) What is the star Pico-net used in BLE?

Q7) a) What are the two main roles in BLE?

b) How does BLE differ from classic Blue Tooth?

c) What is the attribute protocol used in BLE? Explain about Generic Attribute Profile (GATT)? **[3] CO3**

JUIT Test II Examination April 2024