JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2025

B.Tech-I Semester (CSE/IT/ECE/CE/BT/BI)

COURSE CODE (CREDITS): 18B1WEC843 (3) MAX. MARKS: 25

COURSE NAME: INDUSTRIAL IoT

COURSE INSTRUCTORS: MUNISH SOOD MAX. TIME: 1 Hour 30 Min

Note: *(a) All questions are compulsory.*
(b) The candidate is allowed to make suitable numeric assumptions wherever required
for solving problems

Q.No	Question	CO	Marks
Q1	With the help of a suitable diagram explain in detail about IoT reference architecture giving the function of each layer.	2	4
Q2	a) What are the two main roles in Bluetooth Low Energy(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	3
Q3	What are the advantages of CDMA over TDMA and FDMA? Assume four stations S_1, S_2, S_3 and S_4 using a common CDMA channel for communication. Let their data bits be -1,-1, 0 and +1. How would the data be sent over the common CDMA channel? How would the receiver retrieve the data bit of station S_4 ?	4	5
Q4	a) What is the difference between an Adhoc network and an Infrastructure Network. b) What is hidden station and exposed station problem in Adhoc and Infrastructure based IoT networks. How this problem is solved?	4	4
Q5	a) What are the major differences between classical Bluetooth and BLE? b) Explain in detail about the Frame Control Field (in MAC header) used in IEEE 802.11 standard used in WI-FI and BLE.	3	4
Q6	a) What is Zigbee6LoWPAN? b) What is the modulation scheme used in Zigbee6LoWPAN? c) Which band is used for Zigbee6LoWPAN? d) What are the different transmission options available in Zigbee6LoWPAN? e) What is the purpose of the Network Allocation Vector (NAV) in IEEE 802.11 standard protocols?	3 and 4	5