

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2025

B.Tech-VIII Semester (ECM)

COURSE CODE (CREDITS): 24B1WEM832 (2)

MAX. MARKS: 35

COURSE NAME: IoT

COURSE INSTRUCTORS: EPN

MAX. TIME: 2 Hours

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	What do mean by calibration? Briefly describe the steps involved in calibrating a temperature sensor.	CO-2	2
Q2	With a neat sketch explain the working of a stepper motor. What are its applications?	CO-2	3
Q3	With a circuit diagram and a suitable program, describe how a Digital Humidity and Temperature Sensor (DHT) can be connected to an Arduino UNO to read and display the ambient temperature and humidity.	CO-3	5
Q4	Design a Raspberry Pi based IoT system to read the data from a sensor and send it to a server. Write the suitable code in Python for the client side and server side using socket programming.	CO-4	5
Q5	What are MQTT Methods? Describe how various IoT devises can communicate using MQTT protocol.	CO-2	5
Q6	What are LOADing Routing and RPL routing protocols in the context of 6LoWPAN? Describe them briefly.	CO-2	5
Q7	With a suitable timing diagram, explain the Bus Access and Arbitration - Carrier Sense Multiple Access/Collision avoidance by Non Destructive arbitration (CSMA/CD NDA) in CAN bus protocol.	CO-4	5
Q8	What are full function device (FFD) and reduced function device (RFD) in ZigBee. Explain how they can be connected in a Star Topology?	CO-4	5