JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- MAY-2023

COURSE CODE(CREDITS): 21M1WEC236(3) MAX. MARKS: 25

COURSE NAME: Smart Internet of Things

COURSE INSTRUCTORS: Dr. Shweta Pandit

MAX. TIME: 1 Hour 30 Minutes

Note: *All questions are compulsory. Marks are indicated against each question in square brackets.*

Q1. One can classify IoT as Level 1 to 5. How does this classification happen? Explain.**[3][CO1]**

Q2. What is working principle of PIR motion sensor? Explain its L-mode and H-mode operation along with mentioning its pin structure. **[3][CO1]**

Q3. What are the basic features of ARM processor. Explain its features in detail along with mentioning usage of CPSR. **[3][CO1]**

Q4. How does RTOS different from other OS? What are the basic functions that RTOS should have? **[3][CO1][CO2]**

Q5. Provide stepwise procedure to design a smart pet feeder using IoT for pet owners who want to ensure their pets are fed on time and with the correct amount of food. The system should dispense food at scheduled times, and even dispense medication for pets that require it. Provide the components required and with their functionality. **[4][CO2][CO3]**

Q6. For multitasking, how do pre-emptive priority systems work? For aircraft navigation system, describe pre-emptive priority scheme, and how does priority inheritance of RTOS deals with multitasking in this scenario? **[4][CO2][CO3]**

Q7. Design a smart mirror using Raspberry Pi that displays information such as weather, news, and calendar events, and provides voice-controlled virtual assistant functionality.**[5][CO2][CO3]**