

JK Lakshmipat University Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY
 End Term Examination (Regular/Backlog), December 2023
 B.Tech, Semester V

Roll No.....

EE1222: Introduction to IoT and Automation Project

Time: 2 hours

Max. Marks: 30

Instructions to students:

1. Do not write anything other than your roll number on the question paper.
2. Assume suitable data wherever required and mention it.
3. Writing appropriate units, and nomenclature, and drawing neat sketches/schematics/ flow charts wherever required are an integral part of the answer.
4. Use of a Programmable Calculator is not allowed.

Q.1A	What are the four main factors that a solution architect should consider when they choose a cloud?	CO3 (01)
Q.1B	How does Bluetooth fit in with WiFi?	CO2 (01)
Q.1C	Differentiate between BOARD mode and BCM mode used in the Raspberry Pi.	CO4 (01)
Q.1D	Discuss the importance of TCP and UDP protocol.	CO2 (01)
Q.1E	What do you understand about passive and active RFID tags?	CO1 (01)
Q.2	With the use of a given microcontroller having $V_{OH} = 3.3\text{ V}$, $V_{OL} = 0.2\text{ V}$ and $I_{outmax} = 20\text{ mA}$, design an electronic circuit to drive a DC motor rated 4.5 V and 120 mA.	CO1 (05)
Q.3	Design a smart farming system using NodeMCU with the consideration of at least two sensors and a 1 kW AC motor. Draw a circuit diagram and write its program.	CO4, CO5 (05)
Q.4A	Design an attendance marking system using suitable Technology. Draw a block diagram and flowchart for the solution suggested.	CO2, CO4 (03)
Q.4B	An IoT Board has 16-bit ADC with 10V reference voltage. Determine the output in hexadecimal values of this convertor when reading a 3.4 V signal	CO2 (02)
Q.5	Design a temperature control system using Raspberry Pi. It should control the device as per changes in the temperature beyond the limits. Draw a circuit diagram and write the python program/pseudo-code for the system.	CO1, CO4, CO5 (05)
Q.6	Develop an IoT-based Bidirectional Visitor Counter using ESP8266 and Thing Speak server.	CO1, CO3 (05)