

Total No. of Questions : 8]

SEAT No. :

PE-2538

[Total No. of Pages : 2

[6583]-65

T.E. (Electrical)

IoT and Its Applications in Electrical Engineering (Elective-II)
(2019 Pattern) (Semester - VI) (303151A)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates :

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q. 5 or Q. 6, Q. 7 or Q. 8.
- 2) Figures to the right indicates full marks.

Q1) a) A switch is connected to digital pin 5 and a LED is connected to digital pin 13 of Arduino UNO board. Write a program in C to glow the LED 10 times when the switch is closed. [9]

b) Explain with syntax and example, following control statements in Python. [9]

- i) if-else ii) while loop iii) for loop iv) nested if-else

OR

Q2) a) Explain with syntax and example, following functions from Arduino IDE [9]

- i) pinMode() ii) digitalWrite() iii) analogWrite() iv) analogRead()

b) Write a program in Python to accept lower and upper limit of a range of numbers from user and print all the even numbers in that range. [9]

Q3) a) Explain in detail LM35 sensor. Also, with a neat diagram, show interfacing of LM35 sensor with NodeMCU. [9]

b) Write a short note on Ultrasonic sensors. [8]

OR

P.T.O.

Q4) a) Write a program to read data from DHT11 sensor and display it on serial monitor using Arduino IDE. Sensor is connected to D4 pin of Node MCU. [9]

b) Explain with a neat diagram, interfacing of stepper motor with NodeMCU [8]

Q5) a) Write a short note on Wi-Fi communication technology. [9]

b) Write a short note on MQTT communication technology. [9]

OR

Q6) a) Write a short note on Bluetooth communication technology. [9]

b) Write a short note on Zigbee communication technology. [9]

Q7) a) Explain the steps in sending the sensor data to cloud platform. [9]

b) What is meant by Data Visualization? Explain in short, any 4 techniques of data visualization. [8]

OR

Q8) a) Write a short note on ThingSpeak cloud platform. [9]

b) What is API in IoT Cloud? Explain in short, its 4 types. [8]

