

Total No. of Questions : 4]

SEAT No. :

PC-442

[Total No. of Pages : 2

[6359]-563

S.E. (Mechanical & Automobile /Mechanical S.W.) (Insem)

ELECTRICAL AND ELECTRONICS ENGINEERING

(2019 Pattern) (Semester - III) (203156)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates :

- 1) *Solve Q1 or Q2, Q3 or Q4.*
- 2) *Figures to the right indicate full marks.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Assume suitable additional data, if necessary.*
- 5) *Use of non-programmable calculator is allowed.*

Q1) a) What is an embedded system? Quote any four applications of embedded systems. **[3]**

b) Differentiate between microprocessor and microcontroller. **[6]**

c) Explain the following Arduino functions with the help of appropriate syntax: **[6]**

- i) `analogRead()`
- ii) `analogReference()`
- iii) `analog Write()`

OR

Q2) a) List down any six features of Arduino IDE. **[3]**

b) Explain the following GPIO functions with the help of appropriate syntax: **[6]**

- i) `pinMode()`
- ii) `digitalWrite()`
- iii) `digitalRead()`

c) State any six significant features of ATmega328P Microcontroller. **[6]**

P.T.O.

- Q3)** a) What is serial communication in Arduino? Define baud rate. [3]
b) Explain pin functions of LCD module and draw the diagram to interface LCD module with Arduino board. [6]
c) Explain the interfacing of an LED with Arduino board and write an algorithm to blink the LED. [6]

OR

- Q4)** a) List down any six features of in-built ADC in ATmega328P microcontroller. [3]
b) Explain the following Arduino functions with the help of appropriate syntax: [6]
i) Serial.read()
ii) Serial.available()
iii) Serial.print()
c) What is LM35? Draw the interfacing diagram of LM35 to Arduino board displaying the parameter value on LCD module. [6]
