

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]

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