

Total No. of Questions : 4]

SEAT No. :

P5436

[Total No. of Pages : 2

[6186]-564

S.E. (Automobile & Mechanical/Mechanical Sandwich (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 data if necessary.*

Q1) a) Distinguish between a microprocessor and a microcontroller considering following points: **[7]**

- i) Applications
- ii) Architecture
- iii) Speed
- iv) Cost

Also write any six significant features of ATmega328P microcontroller.

b) Write the basic structure of an Arduino Program and hence explain the following programming concepts quoting a suitable example for each: **[8]**

- i) Variables and data type
- ii) Functions
- iii) Conditional statements

OR

P.T.O.

Q2) a) What is an Arduino IDE? State and six important features of Arduino IDE; quoting the constituents of the interface. [7]

b) Draw the neat and labelled schematic of Arduino Board and explain the GPIO channels in Arduino. [8]

Q3) a) Draw the interfacing diagram of an LED with Arduino Board. Write a simple program in order to blink the LED every second. [7]

b) State the features of the temperature sensor LM35. Draw the diagram of interfacing LM35 with Arduino and write an algorithm to display the room temperature on 16×2 LCD. [8]

OR

Q4) a) Draw the diagram of interfacing a 16×2 LCD with Arduino Board and write the algorithm of displaying the string "HELLO WORLD" on the screen. [7]

b) Explain the following Arduino functions used during serial communication: [8]

i) Serial.begin()

ii) Serial.println()

iii) Serial.available()

iv) Serial.end()

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