Total No. of Questions: 8]

SEAT No. :

PA-1212

[Total No. of Pages : 2

[5925]-234

S.E. (Electrical)

FUNDAMENTAL OF MICROCONTROLLER & APPLICATIONS

(2019 Pattern) (Semester-IV) (203149)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) *Solve Q.1 or Q.2, Q.3 or Q.4, or Q.5 or Q.6, Q.7 or Q.8.*
2) *Figures to the right indicate full marks.*
3) *Neat diagrams must be drawn wherever necessary.*
4) *Assume suitable data, if necessary.*

Q1) a) Draw & describe TMOD register. [6]

b) Write short note on Data Types in C. [6]

c) Write a program to generate square wave of 50Hz frequency with 50% duty cycle on pin 2.3. Assume XTAL=11.0592 MHz & use timer 0 in mode 1. [6]

OR

Q2) a) Describe the Timer modes in 8051 microcontrollers. [6]

b) Draw & explain TCON register. [6]

c) Write C Program to toggle bit P1.5 of port P1, 5000 times. [6]

Q3) a) Explain interrupt structure of 8051 microcontroller with neat diagram. [6]

b) With the help of diagram explain interfacing of ADC 0809 with 8051 microcontrollers. [6]

c) Explain Interrupt Priority Register of 8051 Microcontroller. [5]

OR

Q4) a) Write short note on Interrupt enable register. [6]

b) Write a program to turn off LED for connected to Port 0 when interrupt 0 occurs and turn it on when interrupt 1 occurs. [6]

c) Explain the SOC, EOC, & OE pin of ADC 0809. [5]

P.T.O.

Q5) a) Write Short note on SCON register. [6]

b) Explain Steps to transfer Data Serially in 8051 microcontroller. [6]

c) Write program to transfer letter 'T' serially 10 times at baud rate of 4800. Use serial port in mode 1. XTAL=12MHz. [6]

OR

Q6) a) Write short note AT commands required for GSM. [6]

b) Explain Steps to receive Data Serially in 8051 microcontroller. [6]

c) Explain Serial port structure of 8051 microcontroller. [6]

Q7) a) Explain LED interfacing with 8051 microcontroller. [6]

b) With the help of block diagram explain Key interfacing using 8051. [6]

c) With the help of block diagram explain Power measurement using 8051. [5]

OR

Q8) a) With the help of block diagram explain Voltage & current measurement using 8051. [6]

b) Draw interfacing diagram of a stepper motor with 8051 and write program to rotate stepper motor 360 Degree in anticlockwise direction with step angle of 1.8 degree. [6]

c) Explain relay interfacing with 8051 microcontroller. [5]