Total No. of Questions : 6]

SEAT No. :

P5076

[Total No. of Pages : 2

T.E./Insem.-624
T.E. (E & TC) (Semester - I)
MICROCONTROLLERS
(2015 Pattern)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right side indicate full marks.*
4) *Use of calculator is allowed.*
5) *Assume suitable data if necessary.*

Q1) a) Draw and explain the block diagram of 8051 in short. **[5]**

b) Explain following instructions with operation, addressing mode, no. of cycles and time required to execute the following instructions **[5]**

i) DJNZ Rn, X,

ii) MOVC A, @A+DPTR

iii) DAA.

OR

Q2) a) Draw and explain in depth functional diagram of Timer/Counter. **[5]**

b) Write an ALP to transfer GOD continuously at the baud rate of 9600. **[5]**

Q3) a) Draw an interfacing diagram for 7-segment display connected to port 1 and write an ALP to display BCD counter. **[5]**

b) Draw and explain the block schematic of Logic analyzer. **[5]**

OR

P.T.O.

Q4) a) Draw an interfacing diagram of 4*4 matrix keyboard and draw flowchart to detect key pressed. **[5]**

b) Draw an interfacing diagram for LCD and write an ALP to display GANESH on line 2 with default values. **[5]**

Q5) a) Draw an interfacing diagram of DAC and write an ALP to generate square of 2 KHz with delay using timer 1 in mode 0. **[5]**

b) Draw an interfacing diagram of Stepper motor and write an ALP to rotate it anticlockwise continuously. **[5]**

OR

Q6) a) Draw an interfacing diagram for Opto-isolator and write an ALP to flash lamp connected to it with delay of 10 msec. **[5]**

b) Draw a DAS to display the frequency of external signal on 7-segment display with LED indicator for highest value, Draw the flow chart. **[5]**