

Total No. of Questions : 8]

SEAT No. :

P3355

[Total No. of Pages : 2

[5353]-544

T.E. (Electronics)

MICROCONTROLLERS AND APPLICATIONS

(2015 Pattern)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
- 2) Figures to the right indicate full marks.
- 3) Assume suitable data if necessary.

- Q1)** a) Compare microprocessor with microcontroller. [4]
b) With the help of neat block diagram explain DSO. [8]
c) Draw interfacing diagram for DAC with 8051. Write an assembly language program to generate square [8]

OR

- Q2)** a) Draw and explain port 0 and port 1 structure of 8051 microcontroller.[8]
b) Draw interfacing diagram to interfacing LED's with port 1. Write assembly language program to blink LED's. [8]
c) Draw and explain interfacing diagram for Opto isolator with 8051: [4]

- Q3)** a) Explain different registers of PIC 18FXXX microcontroller. [8]
b) Explain following instructions with example [8]
i) ADDWF F, D
ii) DAW
iii) SET F F, a
iv) ANDWF F, d, a

P.T.O.

OR

Q4) a) Define addressing mode. Explain addressing modes of PIC18FXXX microcontroller. [8]

b) Explain BOD and power down mode of PIC18FXXX. [8]

Q5) a) Explain the process of PWN generation in PIC18FXXX. Write embedded C program to generate 25% duty cycle PWM. [8]

b) Draw interfacing of 4×4 matrix keypad with PIC18FXXX. Draw and explain flow chart to detect and display key pressed. [8]

OR

Q6) a) Draw and explain structure of port D of PIC18FXXX microcontroller. [8]

b) Explain the functions of control pins of LCD, draw and explain 16 × 2 LCD interfacing in 4bit mode and 8 bit mode. [8]

Q7) a) Explain SPI serial communication protocol. Explain the different signals used for SPI and how data communication taken place between master and slave. [10]

b) Explain UART protocol in detail. [8]

OR

Q8) a) Write a short notes on : [10]

i) RS232

ii) RS 485

b) Draw and explain interfacing of EEPROM using SPI with PIC18FXXX. Draw flow chart to read and write data into EEPROM. [8]

