

Total No. of Questions : 10]

SEAT No. :

P2942

[Total No. of Pages : 2

[5669]-531

T.E. (Electrical Engineering)

ADVANCED MICROCONTROLLER AND ITS APPLICATIONS

(2015 Pattern) (Semester - I)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, and Q9 or Q10.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks.
- 4) Assume suitable data if necessary.

- Q1)** a) Explain stack memory organisation and stack pointer in detail. [6]
b) Write assembly language program to add the contents of 40H and 140H store the result in 50H. [4]

OR

- Q2)** a) Explain Register indirect addressing mode and immediate addressing mode in detail, with suitable example. [4]
b) Write assembly language program to Toggle the status of PORTD continuously. [6]

- Q3)** a) Into the following program, what will be the contents of working and file register, after execution of program. [4]

```
MOVLW 35H
MOVWF 35H
MOVLW 53H
ANDWF 35H
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- b) Explain Integer and float data types in detail. [6]

OR

- Q4)** a) Write C program to blink LEDs connected to RB1 and RB6 continuously. [5]
b) Write C program to generate delay of 50msec using Timer0. Assume crystal frequency of 10MHz. [5]

P.T.O.

Q5) a) Write C program to measure time period of a square wave applied at CCP1 pin using capture mode of PIC18f458. Use timer3 and crystal frequency of 10 MHz. [8]

b) Explain steps for programming compare mode of CCP1 module in PIC18f458. [8]

OR

Q6) a) Explain DC motor control using PWM of CCP1 module with the help of suitable diagram. [8]

b) Write a C program to generate square wave of 40msec time period compare mode, Use Timer3 with crystal frequency of 10MHz. [8]

Q7) a) Explain 8 bit mode of LCD interfacing with PIC18F458 with the help of suitable diagram. [8]

b) Write C program to continuously transmit character 'YES' serially. Let the Baud rate be 9600 and crystal frequency of 10MHz. [9]

OR

Q8) a) Write C program to receive data serially and transfer it to PORTD. Let the Baud rate be 9600 and crystal frequency of 10MHz. [8]

b) Discuss steps in executing an interrupts in PIC1 8F458.

Q9) a) Explain interfacing of Relay and opto- isolator to PIC1 8F458 with the help of suitable diagram. [8]

b) Explain voltage measurement using ADC of PIC1 8F458. Transfer the converted sample onto PORT B and PORT C . Use Channel 1 for source connection. [9]

OR

Q10) a) Explain ADCON0 and ADCON1 in detail. [8]

b) Explain LM35 Temperature sensor and interfacing for temperature measurement with PIC18F458. [9]

