B.TECH. SEM -V (E & TC ENGG.) 2014 COURSE (CBCS) :
SUMMER - 2018
SUBJECT: MICROPROCESSORS AND MICROCONTROLLERS

Day: Monday **Time:** 10.00 AM TO 01.00 PM
Date: 21/05/2018 **S-2018-2380** **Max. Marks: 60**

N.B:

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Use of non -programmable **CALCULATOR** is allowed.
4) Neat diagram must be drawn **WHEREVER** necessary.
5) Assume suitable data **WHEREVER** necessary.

Q.1 **a)** Differentiate between microprocessor and microcontroller. **(04)**
b) Write a note on addressing modes of 8085 with examples. **(06)**

OR

Q.1 Draw and explain the architecture of 8085. **(10)**

Q.2 **a)** With neat diagram explain interrupt structure of 8051. **(06)**
b) Write a program to add two 8-bit numbers saved at 35H, 46H in RAM of 8051 and save the Result at 30H. **(04)**

OR

Q.2 **a)** Explain the contents of registers related to timers in 8051. **(05)**
b) Write a note on I/O Ports of 8051. **(05)**

Q.3 Write a program to interface 16x2 LCD and display "AAE DIL HAI MUSHKIL". **(10)**

OR

Q.3 **a)** Draw the interfacing of 8051 with 4x4 keyboard and explain the process of key scanning. **(06)**
b) Explain the contents of SCON and PCON registers of 8051. **(04)**

Q.4 **a)** Explain the following instructions of PIC18F with examples. **(06)**
i) BTFSC ii) MOVWF iii) INCF
b) Write a note on I/O ports of PIC18F. **(04)**

OR

Q.4 **a)** Explain the contents of status Register of PIC microcontroller. **(05)**
b) What are the different oscillator options available in PIC18F series? **(05)**

Q.5 **a)** Write a program for PIC18F to glow eight LEDs present at Port C. **(05)**
b) Draw the interfacing of 7 segment display with PIC18F and explain its algorithm. **(05)**

OR

Q.5 Draw the interfacing of 16X2 LCD with PIC18F and write algorithm to display a character on LCD. **(10)**

Q.6 **a)** Explain COMPARE mode of CCP with neat diagram. **(06)**
b) Draw the interfacing of RTC with PIC18F using SPI protocol. **(04)**

OR

Q.6 **a)** Explain CAPTURE mode of CCP with neat diagram. **(05)**
b) Write a note on PWM and explain control of DC Motor using PWM. **(05)**

* * * * *