B.TECH.
THEORY EXAMINATION (SEM–VI) 2016-17
MICROCONTROLLER

Time : 3 Hours   *Max. Marks : 100*

Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.

SECTION – A

1. **Attempt all five questions. All question carry equal marks.   2*10=20**
    (a).   What is difference between microcontroller and microprocessor?
    (b).   Explain the functions of TMOD and TCON registers..
    (c).   What is the function of PC and SP in assembly language programming?
    (d).   Draw and explain the structure of PSW.
    (e).   Write any two assembler directives used for 8051.
    (f).   What is RS232C?
    (g).   How will you double baud rate in 8051?
    (h).   What is the use of RTC?
    (i).   Mention the SFR registers used in timer operation.
    (j).   Mention any four Addressing modes of 8051

SECTION – B

2. **Attempt any 5 questions. All question carry equal marks.   5*10=50**
    (a).   Explain how 8051 is interfaced with external memory with diagram.
    (b).   Explain about MC68HC11 microcontroller.
    (c).   Write the program for converting analog data to digital data with the help of ADC 0804 using conversions and display subroutines.
    (d).   Draw and explain Architecture of 8096.
    (e).   Draw the interfacing of 8051 with 16 K data RAM with the help of latches and gates. Write the program to transfer 10 bytes of data from one location to another in Ram.
    (f).   Explain the interfacing of 8255 with 8051. Write ALP for generating 10 KHz of ramp wave at port A.
    (g).   Draw and Explain interfacing diagram of RS 232 with 8051. Explain about serial port programming
    (h).   Explain the interfacing of stepper motor with 8051, Write ALP for rotating stepper motor clockwise direction.

SECTION – C

Attempt any 2 questions. All question carry equal marks.   15*2=30
3.   Explain how ADC808 can be interfaced with 8051.
4.   Explain the architecture of 8051. What are the different addressing modes in it? Explain with diagram.
5.   (i) Explain Machine cycle, Pulse time and T-state
        (ii) Explain the structure of TCON TMOD and PCON register.