Printed Pages : 1 **Roll No.** | | | | | | | | | | | **NEC022**

B. TECH.

THEORY EXAMINATION (SEM–VI) 2016-17

MICROCONTROLLER AND ITS APPLICATIONS

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. **Explain the following: (10×2=20)**
   - **a.** CISC
   - **b.** RISC
   - **c.** Registers
   - **d.** Addressing modes
   - **e.** Microcontroller
   - **f.** External and Software Interrupts
   - **g.** Delay
   - **h.** RAM and ROM
   - **i.** Interfacing
   - **j.** Serial Port Programming

SECTION-B

2. **Attempt any five of the following: (10×5=50)**
   - a. Draw the block diagram of microcontroller and explain each block in detail.
   - b. Explain the working of 8051 oscillator and clock.
   - c. Discuss the hardware and software attributes of vectored interrupts.
   - d. What is current program status register? Explain the generic structure of program status register as ARM core.
   - e. Explain the details of different kinds of memories given in 8051 microcontroller.
   - f. Describe with examples various modes of 8051 timers.
   - g. Explain stack and stack pointer. With the help of an example explain stack organization.
   - h. With the help of diagram show LCD connections to 8051 and explain its functioning.

SECTION-C

Attempt any two of the following: (15×2=30)

3. a. Draw the diagram of 8031 connection to external program ROM and 8255.
   b. Show how the various blocks of this single chip accessed?
   c. Draw programming model of 8051.

4. a. What do you understand by special function registers? Give their name, function and RAM address.
   b. Describe 8051 flag bits and PSW register.
   c. Explain serial communication procedure in 8051 through interrupts.

5. Draw and explain the interfacing diagram of different types of DC motors, Stepper and Servo motor with 8051.