## Question Bank (K- scheme)

**Name of Course: MICROCONTROLLER AND APPLICATION**

**Course code: (314328)** **Unit Test: I**

**Semester: IV** **Course - :-MAA**

**Programme : EJ**

# Unit 1 Basics of Microprocessor and 8051 microcontroller (18 Marks)

### 2 Marks Questions

1. List the types of buses and define them.
2. Draw the pin diagram of microcontroller IC 8051.
3. State the meaning of Boolean processor.
4. Draw the block diagram of microcomputer.
5. List the derivatives of 8051.

#### 4 Marks Questions

6) Draw the block diagram of microcontroller and describe it.
7) Compare Harvard and Von-neumann architecture
8) Describe internal memory organization of 8051.
9) Compare Microprocessor ,microcomputer and microcontroller.
10) Draw architecture of 8051.
11) Describe power saving options of 8051 with neat circuit diagram.
12) Desribe the function of following pins of 8051:-
    a) RST b)$\overline{PSEN}$ c) ALE d) $\overline{EA}$
13) Compare the derivatives of 8051.
14) List I/O port of 8051 microcontroller and describe their alternate functions.
15) List the features of 8051 microcontroller.

# Unit 2 8051 Instruction Set and Programming (12 Marks)

### 2 Marks Questions

16) List addressing modes of 8051 microcontroller.
17) List software development tools.
18) List two instructions related with external memory.
19) List two instructions related with indexed addressing mode.
20) List two instructions related with compare.
21) State the meaning of DAA and CPL A instruction.

22) Develop ALP to add two BCD numbers and save the result at internal memory location 25h.
23) Develop ALP to mask lower nibble of given 8 bit numbers 57h and save the result at internal memory location 25h.

### 4 Marks Questions

24) Describe following instructions:
1) DJNZ 60H, UP 2) ANL A,#35H
3) SWAP A 4) MUL AB
25) Develop ALP to multiply two 8 bit numbers stored at 20h and 21h in internal RAM. Store result in 22h and 23h.
26) Develop ALP to find largest number out of ten number stored in internal RAM locations 40H onwards, store the result at 50H.
27) Develop ALP to transfer the given block of data of 5 numbers from source block to destination block. Assume source block address is 20h and destination block address is 30h.
28) Describe following assembler directives:
a) EQU b) ORG c) END d) DB

## Unit 3 8051 Timers ,interrupts, serial and parallel communication (16 Marks)

### 2 Marks Questions

29) Draw the format of IE and IP register.

30) Draw the format of TMOD.

### 3 Marks Questions.

31) Describe different Timer modes of 8051 with neat diagram.
32) Develop ALP to generate square wave of 2KHz on port pin P2.3 using timer 0 in mode 1,Assume crystal frequency of 11.0592MHz.
33) Describe TCON register with its format.