

## Question Bank (G scheme)

Name of subject: Microcontroller (MIC)

Subject code: 17534

Unit Test : I

Semester: V

Course : ( EJ, IS, IE )

### CHAPTER 1: Introduction to Microcomputers and Microcontrollers (10Marks)

#### 3 marks

- 1) Explain the different types of buses in a microcomputer.
- 2) Draw the block diagram of a microprocessor.

#### 4 marks

- 3) Draw the block diagram of a microcontroller.
- 4) List the elements of microcomputer. What are the different types of buses?
- 5) Compare between Harvard & Von Neumann architecture.
- 6) List the selection factor of microcontroller. Explain any three of them.
- 7) Compare between microprocessor & microcontroller.

### CHAPTER 2: 8051 Microcontroller(16 Marks)

#### 3 marks

- 8) Describe the organization of internal RAM of 8051.
- 9) Explain Boolean Processor of microcontroller 8051 with two instructions.
- 10) Comparison of 8051, 8031, 8751, 8952 with respect to RAM, TIMRES& I/O Ports.

#### 4 marks

- 11) State any eight features of microcontroller 8051.
- 12) Draw the pin diagram of microcontroller 8051.
- 13) Describe the function of following pins.
  - a) EA/V<sub>pp</sub>
  - b) ALE/PROG
  - c) PSEN
  - d) XTAL1
- 14) State alternative functions of Port 3 pins of microcontroller 8051.
- 15) Draw the architecture of 8051 microcontroller.
- 16) Describe the functions of following registers of 8051.
  - a) Accumulator
  - b) DPTR
  - c) Stack pointer
  - d) Program Counter.
- 17) Draw the format of PSW register & describe it.
- 18) What is a special function registers. State the address of the following SFRs
  - a) SCON
  - b) TCON
  - c) IP
  - d) PCON
  - e) PSW
  - f) ACC.
- 19) Explain the power saving operations of 8051 microcontroller.

20) State features of following derivatives of 8051.

- a) 8031
- b) 8751
- c) 8952
- d) 89V51RD

### **CHAPTER 3:8051 Instruction set and programming (24Marks)**

#### **3 marks**

21) With the help of ANL instruction explains.

- a) Direct addressing mode
- b) Indirect addressing mode
- d) Immediate addressing mode of 8051 microcontroller.

22) List the software development tools required to develop a microcontroller based system. Explain any four of them.

#### **4 marks**

23) List the various addressing modes of Microcontroller 8051 with 1 example.

24) Explain any 4 addressing modes of Microcontroller 8051 with 1 example.

25) Describe the functions of following instructions.

- a) MOV @Rp,A
- b) SWAP A
- c) DA A
- d) MOVC A,@A+DPTR.

26) Describe two instructions each related with external data memory & program memory of 8051 microcontroller.

27) Explain the function of following directives.

- a) DB
- b) EQU
- c) DATA
- d) ORG.

28) Write an assembly language program of 8051 for adding 10 numbers in an array.

29) Write an assembly language program to find largest numbers from the array of 10 numbers stored in internal RAM memory.

30) Write a program to arrange 10 numbers in the array stored in internal RAM memory in descending order.

31) Write an assembly language program to transfer one block to another block of 10 byte stored in internal memory.

32) Draw flow chart & write a program to add two BCD numbers, which are stored at external memory location 3000H & 3001H.

33) Write an assembly language program to arrange an array of 10 numbers stored in external RAM location starting from 2000h in descending order.