

- Q.26 Explain all the arithmetic group instruction with Example.
- Q.27 What is the function of program Counter?
- Q.28 Explain Rotate and Swag operation.
- Q.29 Define 8,16 and 32 bit Microcontroller with example.
- Q.30 What is Bus? Explain types.
- Q.31 Define Microcontroller and its types.
- Q.32 Define Instruction. And its types
- Q.33 Write five features of PIC 16C84.
- Q.34 Explain different Addressing modes of 8051.
- Q.35 Write in Detail about the Interrupts of 8051 Microcontroller.

#### **SECTION-D**

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 What do you mean by addressing modes? Explain the addressing modes of 8051 with the help of examples.
- Q.37 Draw and explain pin Diagram of 8051 Microcontroller.
- Q.38 Explain interfacing of Seven Segment Display with 8051 with the help of Diagram.

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**4th Sem / Branch : Medical Electronics  
Subject:- Microcontrollers Application in  
Medical Technology**

Time : 3Hrs.

M.M. : 100

#### **SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 The I/O ports that are used as address and data for external memory are:
- a) Ports 1 & 2                      b) Ports 1 & 3
  - c) Ports 0 & 2                      d) Ports 0 & 3
- Q.2 Which operations are performed by the bit manipulating instructions of boolean processor?
- a) Complement bit                b) Set Bit
  - c) Clear Bit                        d) All of above
- Q.3 MOVA,@R1 will:
- a) Copy R1 to the accumulator
  - b) Copy the accumulator to R1
  - c) Copy the contents of memory whose address is in R1 to the accumulator
  - d) Copy the accumulator to the contents of memory whose address is in R1
- Q.4 What kind of instructions usually affect the program counter?

- a) Call & Jump      b) Call & Return  
 c) Push & Pop      d) Return & Jump
- Q.5 Which is the only register without internal on chip RAM address in MCS-51?  
 a) Stack pointer      b) Program counter  
 c) Data pointer      d) Timer register
- Q.6 Which control signal/s is/are generated by timing and control unit of 8051 microcontroller in order to access the off-chip devices apart from the internal timings?  
 a) ALE      b) PSEN  
 c) RD & WR      d) All of the above
- Q.7 How many registers can be utilized to write the programs by an effective selection of register bank in program status word (PSW)?  
 a) 8      b) 16  
 c) 32      d) 64
- Q.8 The 8051 has \_\_\_\_\_ interrupt sources  
 a) 3      b) 4  
 c) 5      d) 6
- Q.9 The 8051 has \_\_\_\_\_ 16-bit counter/timers  
 a) 1      b) 2  
 c) 3      d) 4
- Q.10 An alternate function of port pin P3.4 in the 8051 is:  
 a) Timer 0      b) Timer 1  
 c) Interrupt 0      d) Interrupt 1

## SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 Seven segment display is basically a combination of 7.....  
 Q.12 Internal RAM of 8051 is.....  
 Q.13 Full form of PIC is.....  
 Q.14 Pcon stands for.....  
 Q.15 The accumulator is a special purpose and the versatile.....bits register of 8051 microcontroller  
 Q.16 Expand UART.....  
 Q.17 Timer mode '0' is a .....bit mode  
 Q.18 At.....ROM location do we store 1<sup>st</sup> opcode of 8051 program  
 Q.19 8051 Microcontroller has.....I/O ports.  
 Q.20 The 8051 offers.....level of interrupt priority.

## SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Write short note on applications of microcontroller in Medical field.  
 Q.22 Explain Need of Interfacing.  
 Q.23 Explain methods of Interfacing in Microcontroller  
 Q.24 Discuss the Differences B/W direct and indirect address with example.  
 Q.25 Explain PUSH Instruction with program.