



VI Semester B.Sc. Examination, September/October 2021
(CBCS) (Fresh + Repeaters) (2016-17 and Onwards)
ELECTRONICS – VIII
EL – 602 T : Microcontrollers

Time : 3 Hours

Max. Marks : 70

- Instructions :** i) Answer **all** questions from Part – A, **any five** questions from Part – B and **any four** questions from Part – C.
ii) Answer **all** questions of Part – A in **any one** page. The **same** questions answered **multiple times** will not be considered for **evaluation**.

PART – A

Answer **all** the questions.

(15×1=15)

- 1) i) The 8051 has _____ pins for I/O operation.
a) 32 b) 16 c) 8 d) 24
- ii) _____ bit of PSW is used as carry flag.
a) PSW.5 b) PSW.6 c) PSW.7 d) PSW.4
- iii) With each PUSH instruction, the stack pointer register is _____.
a) Decrement by 1 b) Increment by 2
c) Increment by 1 d) Decrement by 2
- iv) _____ is not a bit addressable register.
a) IE b) SCON c) TCON d) TMOD
- v) The alternate function of P3.6 is _____.
a) TI b) RD c) WR d) RXD
- vi) Upon reset the highest priority interrupt is _____.
a) INT0 b) RI c) TF0 d) INT1
- vii) The content of the accumulator after the execution of the following instruction is _____.
MOV A, #05H
ADD A, #40H
a) 43H b) 54H c) 34H d) 45H

P.T.O.



- viii) CPL C is _____
- a) Set the Carry b) Clear the carry
c) Set the source bit d) Compliment the carry
- ix) _____ is an example of immediate addressing mode.
- a) MOV A, 80 H b) MOV A, #80H
c) MOV 80H, 90H d) None of the above
- x) _____ of the following instruction is incorrect.
- a) INC DPTR b) MOVX @ DPTR, A
c) MOV A, #00H d) DEC DPTR
- xi) LJMP is _____ byte instruction.
- a) 1 b) 2
c) 3 d) None of the above
- xii) The unsigned char takes a value in the range of _____
- a) 0 to 65535 b) 0 to 255
c) - 128 to + 127 d) - 127 to + 128
- xiii) The 8051 has _____ bytes of internal data RAM.
- a) 4K b) 512 c) 256 d) 1K
- xiv) The number of interrupts in 8051 _____
- a) 5 b) 3 c) 4 d) 7
- xv) The number of timers available in PIC 16F877A is _____
- a) 2 b) 3 c) 1 d) 4

PART – B

Answer **any five** questions.**(5×7=35)**

2. With a block diagram explain the internal architecture of 8051 microcontroller. 7
3. Explain the functions of general purpose registers and SFRs in 8051 microcontroller. 7
4. Explain all the arithmetic instructions of 8051 microcontroller. 7
5. Explain the various addressing modes available in 8051 with an example for each. 7



6. Explain the following jump instructions :
 - i) Relative jump
 - ii) Short absolute jump
 - iii) Long absolute jump

7
7. Explain the data types used in 8051 C programming.

7
8. With a diagram explain the interfacing of DAC to 8051 microcontroller.

7
9. a) Explain the bit pattern of IE register.
b) Explain the core features of PIC 16F877A microcontroller.

(4+3)

PART – C

Answer **any four** questions.

(4×5=20)

10. Explain the memory organization of 8051 microcontroller.
 11. Write an 8051 assembly language program to subtract two 8 bit numbers and store the result.
 12. Write an 8051 assembly language program to find the smallest in an array of five 8 bit numbers.
 13. Write an 8051 C program to generate a Square Wave with 250 ms delay.
 14. Write the bit pattern of TMOD register to configure timer 0 in mode 1.
 15. Draw the interfacing of PIC microcontroller with LCD.
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