

B.E. Electronics Engineering Sixth Semester
EN605 - Microcontrollers and its Applications

P. Pages : 2

Time : Three Hours



GUG/W/18/1691

Max. Marks : 80

- Notes : 1. All questions carry marks as indicated.
2. Due credit will be given to neatness and adequate dimensions.

1. a) Explain in detail the architecture of 8051 with a neat diagram. 8
b) What is the use of SFR in 8051? List all the SFRs involved in 8051. 8

OR

2. a) Discuss in detail about memory organization and the explanation of memory in 8051 with a neat diagram. 8
b) How does 8051 differentiate internal and external memory? 8
3. a) Explain the I/O port structure of 8051 microcontroller in detail. 8
b) How many interrupts all there in 8051? What are they? Discuss about external hardware interrupt in 8051. 8

OR

4. a) What is the use of TCON register? What should be loaded in TCON register to start Timer 0 and Timer 1? 8
b) Briefly discuss about the serial communication in 8051 microcontroller. 8
5. a) What are the addressing modes supported by 8051? Write one instruction each. Using the following addressing modes: 8
i) Immediate. ii) Register.
iii) Register Indirect. iv) Direct
b) Explain the difference between MOV, MOVX and MOVC instructions. 8

OR

6. a) Explain in detail about branching instructions of 8051. 8
b) Write an 8051 assembly language program to find larger of two 8-bit numbers stored in external RAM 2000H and 2001H. 8

7. a) Write a program to glow LED for a fraction of second when external interrupt INTO is activated. 8
- b) Draw interfacing circuit of LCD with 8051 and write a program to display "HELLO" on it. 8

OR

8. a) Interface 8-bit DAC with microcontroller 8051. Write a program to generate saw tooth wave using DAC. 8
- b) Draw the schematic for interfacing a stepper motor with 8051 microcontroller and write 8051 assembly language program for the same. 8
9. a) Draw the complete block diagram of AT89C51 microcontroller and explain each block in detail. 8
- b) Explain the following pins of AT89C51 microcontroller: 8
- i) XTAL 1 and XTAL 2

OR

10. a) Explain in detail the features of AT89C2051 microcontroller. 8
- b) Write a short note on flash memory of AT89C2051 microcontroller. 8
