B.E. Electronics & Telecommunication / Communication Engineering Fifth Semester

ET504 - Microcontroller and its Applications

P. Pages : 1 **GUG/W/18/1629**

Time : Three Hours * 1 2 8 3 * Max. Marks : 80

Notes : 1. All questions carry marks as indicated.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.

1. a) Explain register organization of μc8051. **8**

b) Explain salient features of 8051 Microcontroller. **8**

OR

2. a) What is the use of SFR in 8051μc ? List all the SFRs involved in 8051μc . **8**

b) What do you mean by stack and stack painter in 8051μc . **8**

3. a) Explain the I/O port structure of 8051 microcontroller in detail. **8**

b) What is the use of TCON register? What should be loaded in TCON register to start Timer 0 and Timer 1? **8**

OR

4. a) What does 8051 differentiate internal and external memory. **8**

b) Explain in brief serial port control register of 8051μc . **8**

5. a) Explain Indexed addressing modes for ROM access with suitable instructions. **8**

b) Write the set of instructions to swap content of R_3 and R_2 in register bank 0 using. **8**

i) Register addressing ii) Direct addressing
iii) Stack iv) XCH
How many bytes of instruction are there in each method?

OR

6. a) Explain the difference between MOC, MOVX and MOVC instructions with neat diagram. **8**

b) Write an ALP to add two 32-bit numbers. The numbers are stored from RAM location 40H and 50H respectively store the result from RAM location 60H. **8**

7. Interface a LCD to 8051 and write an ALP to display "HELLO" on the LCD connected to 8051. **16**

OR

8. a) Interface a DAC to 8051 and write a program to generate a 1KHz square wave of 50% duty cycle. **8**

b) Interface Hex-key pad with 8051 and write a program to send the ASCII code of pressed key to port P_0. **8**

9. a) Describes the ports of AT89C51 μc in details. **8**

b) Write short notes on Flash Memory. **8**

OR

10. a) Draw the block diagram of 8T89C2051 microcontroller. Describe in brief. **8**

b) Explain, how you can program to Flash-Memory? **8**

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