

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

MSc(SS) DEGREE EXAMINATION MAY 2024  
(Fourth Semester)

Branch – SOFTWARE SYSTEMS (five year integrated)

8051 MICROCONTROLLER AND ITS APPLICATIONS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 8051 series has how many 16 bit registers?  
(i) 2 (ii) 3  
(iii) 3 (iv) 4
- 2 How many bytes of bit addressable memory is present in 8051 based microcontrollers?  
(i) 8 bytes (ii) 32 bytes  
(iii) 16bytes (iv) 128 bytes
- 3 Auto reload mode is allowed in which mode of the timer?  
(i) mode 0 (ii) mode1  
(iii) mode2 (iv) mode3
- 4 INC and DEC will work as \_\_\_\_ instructions.  
(i) addition (ii) subtract Determine  
(iii) logical (iv) transfer
- 5 Find the rotational speed of a given stepper motor depends on \_\_\_\_\_.  
(i) Magnitude of supply voltage (ii) polarity of stator current  
(iii) Magnitude of stator current (iv) step pulse frequency

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Discuss about the introduction of microcontroller.  
OR  
b Explain an overview of 8051 family.
- 7 a Illustrate the Arithmetic instructions with examples.  
OR  
b Justify the Boolean instructions with examples.
- 8 a Evaluate the I/O Port programming in 8051.  
OR  
b Explain about the interrupts in 8051.
- 9 a Explain and write the addition of two 8 bit numbers.  
OR  
b Explain to find the one's complement of 8 bit numbers.
- 10 a Discuss the process of interfacing LED to the 8051.  
OR  
b Justify the interfacing DC motor in 8051.

Cont...

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Enumerate the Program counter in 8051.  
OR  
b Elucidate the 8051 register Banks.
- 12 a Differentiate the Loop and Jump instructions.  
OR  
b Compare the Direct and indirect addressing.
- 13 a Explain the Pin description of 8051.  
OR  
b Elucidate the Serial communication in 8051 microcontroller.
- 14 a Develop and write the Block data transfer program using 8051.  
OR  
b Determine to find smallest numbers in an array.
- 15 a Elucidate the interfacing LCD to 8051.  
OR  
b Enumerate the process of interfacing keyboard in 8051 .

Z-Z-Z

END