

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

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

Branch – SOFTWARE SYSTEMS (Five years 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 When 8051 wakes up then 0x00 is loaded to which register?
(i) PSW (ii) SP
(iii) PC (iv) DPTR
- 2 When the microcontroller executes some arithmetic operations, then the flags bits of which register are affected?
(i) PSW (ii) SP
(iii) DPTR (iv) PC
- 3 What is the bit transmitting and receiving capability of mode 1 in serial communication?
(i) 8 bits (ii) 10 bits
(iii) 11 bits (iv) 12 bits
- 4 8051 has ____ special function registers
(i) 21 (ii) 8
(iii) 16 (iv) 11
- 5 Which of the following motor rotates in discrete angular steps?
(i) Servo motor (ii) DC Motor
(iii) Stepper motor (iv) LM

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Discuss about the Rom in 8051.
OR
b Explain briefly about the Flag bits in 8051.
- 7 a Illustrate the logical instructions with examples.
OR
b Justify the Call instructions with examples.
- 8 a Evaluate the Timer 1 operations in 8051.
OR
b Explain about the functions of Counters in 8051.
- 9 a Explain and write the subtraction of two 8 bit numbers.
OR
b Explain to find the two's complement of 8 bit numbers.
- 10 a Discuss the interfacing ADC to the 8051.
OR
b Justify the interfacing LED to the 8051.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11 a Enumerate the microcontrollers for embedded systems.

OR

b Elucidate the PSW register in 8051.

12 a Explain the Data transfer instructions with examples.

OR

b Determine the Register Specific indexed addressing mode in 8051.

13 a Evaluate the various Timers in 8051.

OR

b Compare the timers and counters in 8051 microcontroller.

14 a Develop and to write the Multiplication of 8 bit numbers.

OR

b Determine to find largest numbers in an array.

15 a Elucidate the interfacing Temperature sensors to 8051.

OR

b Enumerate the interfacing Stepper motor in 8051.

Z-Z-Z

END