

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2022
(Sixth Semester)
Branch – PHYSICS

MICROPROCESSOR ARCHITECTURE AND PROGRAMMING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 1 = 10)

1. In 8085 microprocessor, _____ interrupts are maskable.
(i) 2 (ii) 3 (iii) 4 (iv) 5
2. The number of output pins of a 8085 microprocessor are _____.
(i) 40 (ii) 27 (iii) 21 (iv) 19
3. In a microprocessor, the address of the next instruction to be executed is stored in _____.
(i) accumulator (ii) program counter
(iii) stack pointer (iv) instruction register
4. MVI K, 20F is an example of _____ addressing mode.
(i) immediate (ii) register
(iii) direct (iv) indirect
5. In 8086 microprocessor, the address bus is _____ bit wide.
(i) 12 (ii) 10 (iii) 16 (iv) 20
6. _____ flag is set to 1 when the result of the arithmetic or logical operation is zero else it will set to zero.
(i) carry (ii) zero (iii) overflow (iv) sign
7. Number of I/O ports in 8051 microcontroller is _____.
(i) 3 (ii) 4 (iii) 5 (iv) 2
8. _____ instruction affects the program counter.
(i) call and return (ii) push and pop
(iii) return and jump (iv) call and jump
9. The logical instruction that affects carry flag during 8051 execution is _____.
(i) RLC A (ii) XRL A (iii) ORL A (iv) ANLA
10. Destination address of sum of 2 numbers is _____.
(i) accumulator (ii) any register
(iii) memory (iv) intermediate data

SECTION - B (35 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 7 = 35)

- 11 a Explain data transfer and logical instructions in 8085 microprocessor.
OR
b Discuss different types of addressing modes in 8085 microprocessor.
- 12 a Write a program to subtract 19H in memory location 2001H from the memory location 200H which holds the content 51H. Place the result in memory location 2002H

OR

Cont...

- b i. Load the number 6BH in the register B
ii. Load the number 8FH in the register C
iii. Add the contents of the register
- 13 a Discuss data addressing modes of 8086 microprocessor.
OR
b Outline stack memory addressing modes of 8086 microprocessor.
- 14 a Distinguish 8085 from 8051. Also, discuss the different types of microcontrollers.
OR
b Explain the pin features of 8051 microprocessor.
- 15 a Explain data transfer instructions of 8051.
OR
b Briefly explain 8051 Arithmetic and logical instructions.

SECTION - C (30 Marks)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Give the block diagram of 8085 microprocessor and discuss its functional features.
- 17 Explain arithmetic operations related to memory.
- 18 Briefly explain the architecture of 8086 microprocessor.
- 19 Discuss memory organization in 8051 in detail.
- 20 Summarize the applications of 8051 microprocessor as a display interface and interfacing keyboard.

Z-Z-Z

END