

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2025
(Sixth Semester)
Branch – PHYSICS

MICROPROCESSOR ARCHITECTURE AND PROGRAMMING

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 The binary instructions are given with abbreviated names known as
(i) Op Code (ii) Mnemonics
(iii) Assembly language (iv) Machine language
- 2 8 bit registers can store _____ binary bits.
(i) 2 (ii) 4
(iii) 8 (iv) 16
- 3 Technology used in 8086 microprocessor.
(i) HMOS (ii) CMOS
(iii) PMOS (iv) NMOS
- 4 Which of the following buses are present in a microcontroller for transferring data from one place to another?
(i) data bus only (ii) data bus, address bus
(iii) address bus only (iv) address bus, data bus, control bus
- 5 Which of the following file extension that is loaded in a microcontroller for executing any instruction?
(i) .c (ii) .txt
(iii) .hex (iv) .doc

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Illustrate the timing diagrams of the following 8085 μ P instruction and explain them in detail. a) MOV A, M. b) MVIB, 25H.
OR
b Explain about I/o and memory mapped I/o.
- 7 a Write an assembly language program to multiply two 8 bit umbers.
OR
b Write an assembly language program to add two 16 bit numbers.
- 8 a Describe the status register of 8086.
OR
b Mention the total number of registers of 8086 and show the manner in which they are grouped.

Cont...

- 9 a. List out some of the features of the 8051 microcontrollers.
OR
b. Compare 8085 and 8051 Microprocessor.
- 10 a. What are the various data transfer instructions in microcontroller?
OR
b. What is an Addressing Mode in 8051 microcontroller?

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Explain about arithmetic & logical operations in microprocessor.
OR
b Draw and explain the architecture of 8085 microprocessor.
- 12 a Draw block diagram of 8155 programmable input/output ports. Explain control word definition of the same.
OR
b Write a program to find the Largest of number in an array.
- 13 a Mention and explain the modes in which 8086 can operate.
OR
b Draw and discuss the architecture of 8086 microprocessor.
- 14 a Describe the operation of timers present in 8051 microcontroller.
OR
b Explain the functionality of I/O ports present in 8085 microcontroller.
- 15 a How 8051 instruction set is applied for display Interfacing?
OR
b Explain how the 8051 microcontroller transfers the data using serial port.

Z-Z-Z

END