STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086
(For candidates admitted during the academic year 2019-2020 & thereafter)

M.Sc. DEGREE EXAMINATION APRIL 2024
BRANCH III - PHYSICS
FOURTH SEMESTER

COURSE : MAJOR CORE
PAPER : ELECTRONICS II
SUBJECT CODE : 19PH/PC/EL44
TIME : 3 HOURS **MAX. MARKS : 100**

SECTION - A

ANSWER ALL THE QUESTIONS (10x3=30)

1. What is pipe line processing?
2. When does 8086 processor check for an interrupt?
3. List the rotate instructions of µP8086.
4. Explain the instruction LEA reg16, mem.
5. Distinguish microprocessor and microcontroller.
6. Write an assembly language program to perform 8-bit addition using µC8051.
7. List the interrupts available in µC8051.
8. What is the function of TCON and TMOD in µC8051?
9. Mention any three applications of embedded microcontroller.
10. State the uses of asynchronous serial port.

SECTION - B

ANSWER ANY FIVE QUESTIONS (5x5=25)

11. Discuss the various interrupts of µP8086 microprocessor in detail.
12. Write an ALP to arrange a given array of 8- bit hexadecimal numbers in an ascending order.
13. Elucidate the architecture of µC8051 microcontroller with neat block diagram.
14. Interface external program memory with µC8051 microcontroller. Explain how the data is transferred.
15. Discuss the different types of embedded operating systems.
16. Explain the function of the following signal pins in µP8086 based systems $\overline{BHE}$, MN/$\overline{MX}$, $\overline{TEST}$ and RESET, INTR
17. Write an ALP to multiply two 16 – bit numbers using µC8051.

SECTION - C

ANSWER ANY THREE QUESITONS (3x15=45)

18. Draw the block diagram and explain the architecture of 8086 microprocessor.
19. With an example, explain the string related instructions and its functionality in detail.
20. Explain different addressing modes of µC8051 in detail with suitable examples.
21. Explain how stepper motor can be interfaced to microcontroller µC8051 with a neat diagram.
22. Discuss the architecture of microchip PIC16C6X with a neat diagram.

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