ST.JOSEPH'S COLLEGE (AUTONOMOUS), BANGALORE-27
B.Sc. ELECTRONICS – V SEMESTER
SEMESTER EXAMINATION- OCTOBER 2019
EL 5215 - MICROPROCESSOR AND INTERFACING

Time: 2 ½ hrs   **Maximum marks: 70**

This question paper has **TWO** printed pages and **THREE** parts.

PART – A

ANSWER ANY FIVE OF THE FOLLOWING   **5X8=40 Marks**

1. a) Explain pipeline concept of microprocessor 8086.
   b) Draw the block diagram of minimum mode configuration of 8086.   (4+4)

2. a) Explain physical memory organization of 8086.
   b) Define Interrupt? Explain Maskable and non maskable interrupts of 8086.   (4+4)

3. a) Explain Interrupt Response Sequence.
   b) With example explain Direct and Register indirect addressing modes.   (4+4)

4. a) Write the Control Word configurations for BSR and I/O modes of IC 8255 PPI.
   b) Draw the block diagram of IC 8253.   (4+4)

5. a) Define three modes of data transmission in reference to Intel 8251 Programmable
   Communication Interface.
   b) What is the need of memory devices? Differentiate between Volatile and Non-volatile
   memories.   (3+5)

6. a) Write a short note on SRAM.
   b) Write a short note on computer virus.   (4+4)

7. a) Write the steps involved in POST operation of a computer system.
   b) Write a note on application software.   (4+4)

PART – B

ANSWER ANY FIVE OF THE FOLLOWING   **5x4=20 Marks**

8. Draw the timing diagram for memory write operation in minimum mode.

9. Generate 20 bit physical address for the following.
       i) IP content 123CH, CS content 2345H
       ii) MOV AX, [BX] Given: DS:BX = 1000H:2000H

10. Write an ALP to generate Fibonacci series for ten numbers.

11. Write an ALP to interchange 8-bit data between two data blocks of eight numbers.

12. Write an ALP to find smallest among ten 8-bit numbers.

13. Write an ALP to interface stepper motor.

14. Write an ALP to interface 7 segment display.

PART – C

ANSWER ANY FIVE OF THE FOLLOWING   **5x2=10 Marks**

15. Which flag bits are responsible to recognize maskable interrupt and string direction?

16. If AX = 1954H. What will be the result in AX after **NEG AX** is executed?

17. Data bus of 8259A is of 8-bit, but it is compatible to 16 bit processors? Justify?

18. Give one example for real and one for virtual memory.

19. Why NVRAM is called non volatile memory?

20. Write two functions of Antivirus.

21. What is the need of BIOS in computer?

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