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Register Number:

DATE: 14-03-2022

ST.JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27

B.Sc. ELECTRONICS – V SEMESTER

SEMESTER EXAMINATION: OCTOBER 2021

(Examination conducted in February-March 2022)

**EL 5218 - Microprocessors**

**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) Write a note on multicore processors.

 b) Write a note on ARM architecture. (4+4)

2. a. Draw a neat and labeled block diagram of microprocessor 8086.

 b. Define Bus Interface Unit and Execution Unit. (4+4)

3. a) Write a note on Parallel computing Architecture.

 b) Explain even and odd memory banking in 8086 based system. (4+4)

4. a) With example explain immediate and direct addressing modes.

 b) Explain the following instructions with example.

i) LEA ii) DAA iii) XOR iv) SHR (4+4)

5. a) Define an interrupt. Explain maskable and non-maskable interrupts.

 b) Write short note on Pentium IV processor. (4+4)

6. a) Write any four additional features of Pentium pro processor.

 b) Give any four features of Intel 80286. (4+4)

7. a) Write a note on FRAM.

 b) Write a note on EPROM. (4+4)

**PART – B**

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

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

9. Show the calculations and generate the 20 bit effective physical addresses for stack, code and data segments from the given register values:
 **SS: 3860H, CS: 2200H, DS:1000H, SP: 1735H, SI: 2345H, IP: 1100H**

10. What are the flags affected and show the content of AL register after the execution of the

 following instructions.

 MOV AL, 29H

 MOV BL, 4CH

 ADD AL, BL

11. Write an ALP to find the average of eleven-8bit numbers.

12. Write an ALP to find 1’s and 2’s complement of an 8 bit and 16-bit number.

13. Write an ALP to find the smallest in ten 8-bit numbers.

14. Write an ALP to generate Fibonacci series for first ten elements.

**PART – C**

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

15. Hyper-Threading Technology improves CPU’s throughput. Justify.

16. Name the two control signals in minimum mode and two control signals in maximum mode

 which help in Direct Memory Access.

17. What is difference between DIV and IDIV?

18. What is dual pipelining in Pentium processors?

19. What is the size of address bus and physical memory of 80386?

20. Why is SRAM preferred over DRAM to make cache memory?

21.  How are the memories classified?

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