F.Y. B.Sc.(IT) : Sem. II

Microprocessor Architecture

Time : 2½ Hrs.] Prelim Question Paper **[Marks : 75**

N.B.: (1) All questions **are** compulsory.
(2) **Make suitable assumptions** wherever **necessary** and **state the assumptions** made.
(3) **Answer** to the **same questions** must be **written together**.
(4) **Numbers** to the **right indicate marks**.
(5) Draw **neat** labeled **diagrams wherever necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt the following (any **THREE**) **[15]**
(a) Draw architecture of 8085.
(b) Write a short note on flag register.
(c) What is word, nibble, assembly language and machine language.
(d) What is tri- state buffer?
(e) Differentiate between higher level and lower level programming language. Also differentiate between machine language and assembly language.
(f) With a neat diagram explain the functional pin configuration of the 40 pin IC8085.

2. Attempt the following (any **THREE**) **[15]**
(a) What is Instruction? What are the types of instruction.
(b) WAP To perform addition of two 8 bit numbers using 8085.
(c) WAP To perform the subtraction of two 8 bit numbers using 8085.
(d) Explain the use of OUT instruction. Also explain how the instruction is executed with the help of relevant timing diagram.
(e) With a neat diagram discuss the programming model of 8085 microprocessor.
(f) List different addressing modes used by 8085 microprocessor. Write any one 1byte and any one 2 byte instruction to perform arithmetic operaiton using 8085 microprocessor.

3. Attempt the following (any **THREE**) : **[15]**
(a) Write a short note on rotate instruction.
(b) Write a short note on stack .
(c) Write a procedure to execute CALL instruction.
(d) Explain how 8085 microprocessor performs logical operation of comparing two data.
(e) What is time delay? Why is it needed? Explain how time delay can be generated using a register pair.
(f) Explain the following concepts for subroutine program –
(i) Nesting (ii) Multiple Ending Subroutine

4. Attempt the following (any **THREE**) **[15]**
(a) Write steps to convert a binary number to BCD. Write a program to convert given 8 bit binary number to BCD.
(b) What are utility Programs? What is their use in software development systems? Discuss various tools used for developing software assembly language programs.
(c) What do you mean by vectored interrupts? Discuss each of 8085 vectored interrupt in brief.
(d) What is cross assembler and loader?
(e) Write a note on DMA.
(f) WAP to convert BCD to Binary.

5. Attempt the following (any **THREE**) **[15]**

(a) What are different types of special Pentium registers? Describe them in brief.
(b) Discuss the SYSENTER and SYSEXIT instructions of Pentium II Processor.
(c) What are the basic categories of SPARC instructions? Discuss any two categories.
(d) Write short note on CPUID instruction.
(e) Compare i3, i5, i7.
(f) What are the features of SUN SPARC.

Paper Discussion Schedule

Date	Day	Timing	Centre
9 April. 2018	Monday	9 a.m. to 11 a.m.	Dadar
9 April. 2018	Monday	12 p.m. to 2 p.m.	Andheri
9 April.2018	Monday	3 p.m. to 5 p.m.	Borivali
9 April.2018	Monday	5 p.m. to 7 p.m.	Thane
7 April.2018	Saturday	8 a.m. to 10 a.m.	Kalyan
7 April.2018	Saturday	6 p.m. to 8 p.m.	Nerul

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