

FMET / JMT

Q. P. Code : 33408

(2½ Hours)

[Total Marks: 75]

- N. B.: (1) **All** questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** 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 **any three** of the following:

15

- How does a Microprocessor work?
- Explain the following in terms of Compilers:-
 - Source code
 - Object code
- How is a flip or a latch used as a storage element?
- What are the different internal data operations and the register of the 8085 microprocessor?
- Describe the various buses in the 8085 microprocessor.
- Draw a neat labelled diagram of the 8085 Microprocessor.

2. Attempt **any three** of the following:

15

- Compare the working of an IN and OUT instruction in 8085 microprocessor
- Write a short note on Memory mapped I/O techniques.
- List and describe the various Arithmetic instructions in the 8085 microprocessor instruction set.
- Write an assembly program to subtract the contents of memory location 2041H from 2040H and store the difference in 2050H.
- Compare and explain the following instruction :-
 - LDAX and STAX
 - JC and JNC
 - HLT and NOP
- Explain the working of the instructions XRA A and the ANI FOH.

2

2

1

3. Attempt **any three** of the following:

15

- Write an assembly program for 8085 microprocessor to exchange the contents of memory location 2020H and 2021H
- Explain how rotate instructions can be used to check the if the hexadecimal number is odd or an even number .
- Calculate the time delay for the 8085-based Microcomputer with 2 MHz clock frequency.

Label	Mnemonics	Operand	T cycle
	LXI	B, 2384H	10
LOOP:	DCX	B	6
	MOV	A,C	4
	ORA	B	4
	JNZ	LOOP	10/7

- Write a program to generate a Square wave of a 500 microsecond delay.
- Explain the effect of the POP and PUSH instruction on the Stack Pointer.
- List and describe the working of Various Calls and Returns instruction in 8085 microprocessor

4. Attempt any three of the following:

15

- a. Write an assembly program for 8085 microprocessor to convert $(1111\ 1111)_2$ to its BCD equivalent.
- b. Explain the following instruction for 8085 microprocessor :-
 - i) DAA
 - ii) XCHG
- c. Explain the working of an interrupt in 8085 microprocessor.
- d. What is the function of an editor , assembler and loader?
- e. List and describe of files generated after cross assembling
- f. Write a short note on SIM instruction.

5. Attempt any three of the following:

15

- a. What are the features of Pentium Processor.
- b. List and describe the special Pentium registers
- c. Describe the memory management in Pentium and Pentium pro processors
- d. Compare Core i5 and i7 processors.
- e. Describe the general SPARC Architecture.
- f. What are the various instruction format in the SPARC Architecture?