**Question Bank (K scheme)**

**Name of subject: MICROPROCESSOR ALL CHAPTERS**
**Subject code: 314321 Course : CM**
**Semester: IV**

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## CHAPTER1: 8086-16 Bit Microprocessor (CO1) (14 Marks)

### 2 Marks

1 List any four Salient features of 8086.

2 Define Pipelining and give its two advantages.

3 List 16-bit registers of 8086.

4 Draw the flag register format of 8086 microprocessor.

5 Calculate the physical address if :

(i) CS = 1200H and IP = DE00H

6 State the function of following pins of 8086.

(a) TEST (b) BHE

7 State the function of following pins of 8086.

(a) ALE (b) DT/R

8 State the function of following pins of 8086.

(a) M/IO (b) READY

### 4 Marks

1 Draw the pin diagram of 8086.

2 Draw architecture of 8086 and Label it.

3 Explain pipelining in detail with diagram.

4 Write any four important functions of BIU.

5 Write any four important functions of EU.

6 Describe memory segmentation in 8086 with suitable diagram.

7 Describe the physical address generation processor in 8086 microprocessor.

8 Define logical and effective address. If CS = 2135 H and IP = 3478H, calculate Physical Address

## CHAPTER 2 : The Art of Assembly Language Programming (CO2) (8 Marks)

**2 Marks**

1 State the function of Editor.

2 Describe Linker and Debugger .

3 Describe following assembler directives.

(a) DD (b) STRUCT

4 Describe following assembler directives.

(a) EQU (b) EVEN

5 Difference between Assembler Directive and Instructions.

6 Draw the different set of symbols used in the flowchart.

**4 Marks**

1 State the steps involved in program development.

2 Explain Assembly language program development tools.

3 Describe the directives used to define the procedure with suitable example

4 Describe any four assembler directives with suitable example

5 Give the description of following assembler directives

i. OFFSET operator

ii. PTR operator

iii. TYPE operator

iv. GLOBAL operator

## CHAPTER 3: Instruction Set of 8086 Microprocessor (CO3) (18 Marks)

**2 Marks**

1. Define immediate addressing mode with suitable example.
2. State any two differences between TEST and AND instructions.
3. State the function of STC and CMC Instruction of 8086.
4. Write any four-bit manipulation instructions of 8086
5. State two examples of each, Immediate and based indexed Addressing modes.
6. Identify the addressing mode of the following instructions.
   (a) MUL AL,BL (b) MOV DX,0040H
7. Explain the following instruction of 8086
   (a) XLAT (b) XCHG
8. Explain the following instruction of 8086
   (a) CALL (b) RET

**4 Marks**

1. Sate and explain any four-addressing mode of 8086 with example.
2. Explain any four logical instructions of 8086 microprocessor with example
3. List and explain any four string operation instruction
4. List and explain any four process control instruction
5. List and explain any four branching operation instruction
6. With suitable example explain following instruction.
   (a) DAA (b) ADC
   (c ) MUL (d) AAM
7. Write assembly language instructions of 8086 microprocessor to
   (a) Divide the content of AX register by 50H
   (b) Multiply AL by 08 H.
8. Describe how string instructions are used to compare two strings with suitable example.
9. Write assembly language instructions of 8086 microprocessor to
   (a) Rotate the content of BX register by 4 bit toward left.
   (b) Shift the content of BX register to right 3 times

## CHAPTER 4: Assembly language Programming (CO4) (20 Marks)

**2 Marks**

1. Write an ALP to add / subtract two 8 bit numbers
2. Write an ALP to Add / subtract two 16 bit numbers

**4 Marks**

1. Write an ALP to multiply two 16 bit signed /unsigned numbers.
2. Write an ALP to count odd numbers in the array of 10 numbers
3. Write an ALP to find largest number in the array
4. Write an ALP to count number of '0' in 8 bit number.
5. Write an ALP to subtract two BCD number using procedure.
6. Write an ALP to concatenate two strings
7. Write an ALP to perform block transfer operation of 10 numbers
8. Write an ALP to find length of string
9. Write an ALP to check a given number is positive or negative
10. Write an ALP to count ODD and/or EVEN numbers in array .
11. Write an ALP to transfer 10 bytes of data from one memory location to another, also draw the flow chart of the same

## CHAPTER 5: Procedure and MACRO (CO5) (10 Marks)

**2 Marks**

1. Explain Re-Entrant and Recursive Procedure with diagram
2. Define MACRO with its syntax.
3. Write any two differences between NEAR and FAR procedure.
4. Explain CALL and RET instruction

**4 Marks**

1. Explain MACRO with suitable example. List four advantages of it
2. Differentiate between Procedure and Macros
3. Write an ALP for Z = (A + B) * (C+ D) using PROCEDURE
4. Write an ALP for Z = (P + Q) * (R + S) using MACRO. Draw flow chart of the same.
5. Write a MACRO to perform 32 bit by 16 bit division of unsigned numbers