**SIES COLLEGE OF ARTS, SCIENCE & COMMERCE**

**PHYSICS DEPARTMENT**

**(2017-2018)**

**SYB.Sc Paper III Unit 2 (**8085 Microprocessor)

**Worksheet – III**

1. If (B)= 74H and (E) = 2DH, what will be content of A, B , C and E register after the execution of each of the following instructions:

 i) MOV A, C

ii)MOV A, B

iii)MOV E, A

iv)MOV C, E

1. How do you check if a number is

1. Even or odd?

2. Positive or negative?

1. The memory addresses in the following program have been wrongly written by a student. Write it properly.

F000  LXI H, 8070H

F001  MOV A, M

F002  STA C000H

F003  MVI B, D7H

F004  ADD M

F005  STA C001H

G006  HLT

1. Write the meaning, functional category and width of the following instructions:

MOV C, D

RAR

ORI 77H

STC

SUB C

CMP D

JM C000H

JMP D300H

MVI B, 6BH

1. Do the following:
2. Classify the following instructions in 8085 microprocessor depending on the width or size of the instruction :    RAR ;   STC;    MVI D, CCH;    LDA F000H
3. Classify the following instructions in 8085 microprocessor depending on the Addressing mode:

MVI  E, 54H;     ADD C;    ANI 61H;     STAX B ;   DCR M

1. Classify the following instructions in 8085 microprocessor depending on the function performed by the instruction : NOP;    CMA ;  STA D010H;    INR M
2. Answer the following questions:
   1. Name the 5 flags and write when they are Set and when they are Reset.
   2. Draw the symbols used in a flow chart and give the meaning.
   3. Draw the format of flag register and write the function of each flag.
   4. How many conditional jump instructions are available in 8085? Which are they?
   5. What do you understand by **'comparing 45H with 68H'** in microprocessor?
   6. List down the different categories of instructions w.r.t functions performed. Give 2 examples for each.
3. Write instructions in  assembly language for the following :

1. Complement carry flag

2. Exor the content in A with itself

3. Rotate accumulator right without carry

4. Restart the program

5. Add H L content to B C content and store in HL

6. Load accumulator with 8bit data A5H

7. Increment HL pointer

8. Add with carry E register data with accumulator

9. Subtract B register content from accumulator content

10. Copy data from memory C004H to accumulator

11. Clear accumulator

12. Compare A register content with D register content

13. Jump if no carry to C000H

14. Subtract the content of E register from accumulator

15. Add the data in B register to A register

1. Answer the following questions, draw neat diagrams wherever necessary:
   * + - 1. Write decimal numbers 0 to 15 in binary and hex in a tabular form.
         2. Write briefly on programming model of the registers in 8085 microprocessor.
         3. What are the rotate instructions in 8085 microprocessor? Explain with a diagram.
         4. What is a flag? List down the various flags in flag register. Draw also its format.
         5. Draw the flow chart to add the 2 hex numbers 5AH and C8H, store the result and the carry.
2. Write the comments for each instruction for the following 8085 program:

|  |  |
| --- | --- |
| Instruction | Comment |
| MVI C, 92H |  |
| MOV A, C |  |
| MOV D, A |  |
| SUB C |  |
| MOV B, A |  |
| HLT |  |

1. What is the size of accumulator? Can the accumulator hold 9 bit data?

If accumulator contains 9AH and carry flag is reset, what will the accumulator contain after execution of RAL?

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