Department of Mechanical Engineering
Academic Year 2021 – 2022 (Odd Semester)

Degree, Semester & Branch: VII Semester B.E Mechanical Engineering
Course Code & Title: ME8791 & Mechatronics
Name of the Faculty member (s): Mr.T.Selvasundar, AP/Mechanical,
S.Valai Ganesh, AP/Mechanical

Innovative Practice Description

- **Unit / Topic: Unit II /** 8085 Microprocessor Instruction Set
- **Course Outcome:** CO2
- **Topic Learning Outcome:** TLO5
- **Activity Chosen:** Activity based learning- 8085 Microprocessor Instruction Set

- **Justification:**

  In the Unit-II (8085 Microprocessor and 8051 Microcontroller) of the subject ME8791 Mechatronics syllabus there is a separate portion which explains the architecture, pin diagram, addressing mode and instruction sets of 8085 Microprocessor. Students are explained these concepts using the 8085 Microprocessor kit available in the Mechatronics Laboratory. For better understanding and easy remembering of the instructions and their functions students are involved in a classroom based activity in which students will be able to remember, recall the function of the given instruction of the 8085 Microprocessor.
- **Time Allotted for the Activity:** 15 Minutes (22.09.2021)
- **Details of the Implementation:**

  Initially teams were formed each team had two students. Sheet has circulated to all teams containing different types of Instruction set. They have to identify the instruction which is asked in the sheet that comes under which type of instruction set. Normally 8085 has 246 numbers of instructions and it can be classified into five different types.
- **CO – PO / PSO mapping:**

CO	PO 1	PO 9	PO 12
CO 2	2	2	1

(1 – Low 2 – Moderate 3 – High)

- **Images / Screenshot of the practice:**

Sample Activity based learning sheet

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ME8791 Mechatronics

VII Semester A Section (2021 – 2022)

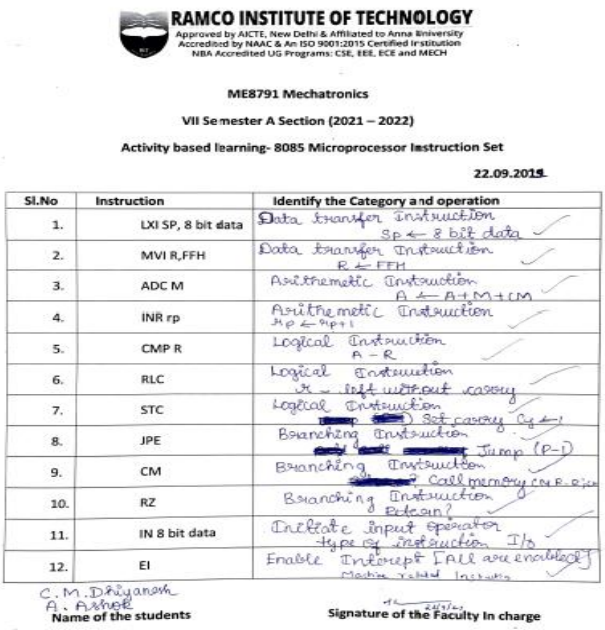
Activity based learning- 8085 Microprocessor Instruction Set

22.09.2019

Sl.No	Instruction	Identify the Category and operation
1.	LXI SP, 8 bit data	Data transfer instruction SP 8 bit data
2.	MVI R,FFH	Data transfer Instruction R ← FFH
3.	ADC M	Arithmetic Instruction A ← A+M+CM
4.	INR rp	Arithmetic Instruction rp ← rp+1
5.	CMP R	Logical Instruction A − R
6.	RLC	Logical Instruction r - left without carry
7.	STC	Logical Instruction set carry Cy ← 1
8.	JPE	Branching Instruction Jump (P-1)
9.	CM	Branching Instruction Call memory
10.	RZ	Branching Instruction Return?
11.	IN 8 bit data	Initiate input operator type of instruction I/O
12.	EI	Enable Interept [All are enabled] Machine related Instruction

Name of the students

Signature of the Faculty In charge



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C.M.Dhiyanesh
A. Ashok
Name of the students

Signature of the Faculty In charge

- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***

    This kind of activity is very useful to check our level of understanding about the instruction set and it helps us to categorize the types of instruction.
  - ***Benefit of the practice:***

    The students will be able to describe the functions of the Microprocessor 8085 and their interface and students will be able to remember the instruction set of 8085 Microprocessor easily.
  - ***Challenges faced in implementation:***

    This activity based learning was conducted in a neat manner and challenges faced to implement this activity were a separate instruction set sheet was circulated to all teams and marks awarded based on their involvement and correct answer.

References:

- 1.Tilak Thakur, " Mechatronics"Oxford Press Publisher, Latest Edition.
- Introduction To Instruction Set For 8085 Microprocessor - https://www.youtube.com/watch?v=G3iUO96XhC4

Signature of Faculty Member **HOD**