

COLLEGE OF ENGINEERING & TECHNOLOGY



Department : Mechanical Engineering.

Lecturers : Ass. Prof. Rola Afify

Marks: 40

Course Name : Industrial Hydraulic System

Course Code: ME763E

Date : 22/01/2023

**Final Examination paper**

<i>Student Name</i>	
<i>I.D</i>	

**Marks**

Question	Actual	Available
1		10
2		10
3		10
4		10
<b>Total</b>		<b>40</b>
<b>Lecturer</b>	<b>Name: Rola Samir Afify</b>	<b>Sign</b>
	<b>Date: 01/2023</b>	

## **FINAL EXAMINATION PAPER**

### **Question One [10M]**

- a) What are the advantages and disadvantages of fluid power? [3M]
- b) Does a Hydraulic Jack produce More Energy than it receives? [4M]
- c) Draw the Conversion of Power from Input Electrical to Mechanical to Hydraulic to Output Mechanical in a Hydraulic System. [3M]

**Question Two [10M]**

- a) Declare Servo Valve Working Principle. [3M]
- b) Compare between Dynamic seals types. [3M]
- c) A steel tubing has a 1.250-in outside diameter and a 1.060-in inside diameter. It is made of SAE 1010 dead soft cold-drawn steel having a tensile strength of 55,000 psi. What would be the safe working pressure for this tube assuming a factor of safety of 8? [3M]
- d) Mention four common filter locations in the hydraulic systems [1M]

**Question Three [10M]**

- a) Mention five Selection standards of pipe materials [1M]
- b) Mention how to Control of Noise Levels. [3M]
- c) Mention Probable Causes of Hydraulic System Problems. [3M]
- d) Mention why Reactive Maintenance is the least effective method and what are other possible methods? [3M]

**Question Four [10M]**

For the following hydraulic circuit (sequence cylinders), shown in the figure, write down the full name [3M] and the function of each component [4M] also, explain (using sketches) the operation of the hydraulic circuit. [3M].

