**ME370: ADAMS LAB**

**Department of Mechanical Engineering,**

**IIT Bombay**



**Session 2 Report**

**Group / Section:** A8

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**Roll Number:** 200020023



**Date:** January 30,2023

**Given Information**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | Lengths | | | | | | | |
| Roll Number | 200020023 | Disk | | A | B | C | D | E | F |
| Sun/Planet Diameter Ratio | 1.894 | Ratio | | 17 | 14 | 17 | 21 | 16 | 19 |

There was no modification requiredfor the lengths BE, BF and BG.

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| **ISOMETRIC VIEW OF LINKAGE** |
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| **ISOMETRIC VIEW OF LINKAGE** |
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**Question 1 (Coupler Curves)**

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| **X DISPLACEMENT OF POINTS E, F & G** |
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| **Y DISPLACEMENT OF POINTS E, F & G** |
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| **Y DISPLACEMENT VS X DISPLACEMENT OF POINTS E, F & G** |
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**Question 2 (Transmission Angle)**

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| **TRANSMISSION ANGLE OVER ONE COMPLETE ROTATION** |
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**Question 3 (Reaction Forces at Joints)**

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| **REACTION FORCES AT JOINTS** |
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**RESULT:** (Most Sturdy Revolute Joint)

The graph with highest peak corresponds to the sturdiest joint.

Joints A, B, C, D correspond to the joints 1,2, 3 and 4 in the above graph.

Order of Sturdiness: A>D>B>C

**Question 4 (Forces for Different Materials)**

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| **REACTION FORCES FOR DIFFERENT MATERIAL LINK** |
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**RESULT:** (Most Sturdy Revolute Joint)

The materials of the links AB, BC, CD and DA correspond to Copper, Steel, Magnesium and Titanium respectively.

Order of Sturdiness: A>D>B>C

**Question 5 (Spatial 4-Bar Linkage)**

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| **ISOMETRIC VIEW WITH CRANK AT 0 DEGREES** |
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| **ISOMETRIC VIEW WITH CRANK AT 20 DEGREES** |
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| **ISOMETRIC VIEW WITH CRANK AT 40 DEGREES** |
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| **ISOMETRIC VIEW WITH CRANK AT 80 DEGREES** |
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—X—X—X—X— X—X—X — X—**END**— X—X— X—X— X—X— X—X—