

G. S. Mandal's  
 Maharashtra Institute of Technology, Aurangabad  
 (An Autonomous Institute )  
 END SEMESTER EXAMINATION  
**First Year M.Tech (ME) -April/May 2022**

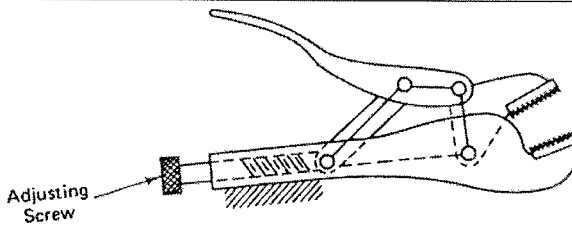
Course Code : MTM121  
 Duration : 2 Hrs

Course Name : PE-I Kinematics: Dyna. & Synth.  
 Max. Marks : 50

Date : 13/04/2022

**Instructions :**

- i) All questions are compulsory
- ii) Assume suitable data wherever necessary and clearly state it
- iii) Figures to right indicate full marks

Q. 1	Answer the following questions (Any five)			
	Questions	Marks	CO	BL
a)	Can a crank slider mechanism be obtained from four bar link? If yes how?	2	CO1	2
b)	What is Grubler's equation ? Explain how it is used to find degrees of freedom.	2	CO1	2
c)	What do you understand by path generation?	2	CO2	2
d)	How to find degrees of freedom of mechanism having roll slide pair?	2	CO2	2
e)	What is fixed and moving centrode?	2	CO4	2
f)	Explain with example a pair (joint) having three degrees of freedom.	2	CO6	2
Q. 2	 <p>Figure shows a pair of locking toggle pliers. Identify the type of linkage. Determine the degrees of freedom of the linkage. What is the function of adjusting screw?</p>	8	CO2	3
Q. 3	Explain synthesis of multi-loop linkage mechanisms with suitable examples	8	CO3	5
Q. 4	Explain inflection point and inflection circle with an example	8	CO4	2
Q. 5	What is dyad? Explain the use of dyad with an example? <b>OR</b>	8	CO2	5
Q. 5	What is loop closure equation technique? How it is applied for function generation?	8	CO2	3
Q. 6	What is Bobilier's Theorm? Analyze for any one case. <b>OR</b>	8	CO4	4
Q. 6	What is meant by time response of a mechanism?	8	CO5	3

