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**MANIPAL INSTITUTE OF TECHNOLOGY**  
**MANIPAL**  
*(A constituent unit of MAHE, Manipal)*

**DEPARTMENT OF MECHATRONICS**  
**VII SEMESTER B.TECH. (MECHATRONICS)**

**END SEMESTER EXAMINATION, December 2021**

**SUBJECT: ROBOTICS II [MTE 4081]**

**SUBJECT CODE: MTE 4081**

**Date: 20/12/2021**

**Time: 75+10 MINUTES**

**MAX. MARKS: 20**

**Instructions to Candidates:**

- ❖ Answer **ALL** the questions.
- ❖ **MISSING DATA MAY BE SUITABLY ASSUMED AND JUSTIFIED.**

Q. No	PART B	M	CO/ CLO	PO	LO	BL
1A.	For the wheeled Locomotion, examine the four major classes of wheels used as wheeled mechanism with neat sketch of the four basic wheel types.	5	1	1,2	1,2	3
1B.	Illustrate any of the Dielectric elastomer applications with the help of its working principle.	3	1	1,2	1,2	3
1C.	Predict the materials used for the fabrication of pneumatic networks.	2	1	3,4	1,2	3
2A.	By applying kirigami-inspired sensors illustrate how soft robots can create awareness of the motion and position of their bodies efficiently.	5	4	1,2	4,6	3

2B.	With the help of a table, illustrate the type of motion, resistance to motion and its corresponding locomotion mechanism that are found in nature.	3	4	1,2	1,2	3
2C.	Illustrate wheel configurations for rolling vehicles based on 2 wheels, arrangement of wheels, and the description of wheel placement.	2	4	1,2	1,2	3