

K.E.Society's

Enroll No

Rajarambapu Institute of Technology, Rajaramnagar
(An Empowered Autonomous Institute, affiliated to SUK)

Q.P. Code
UT 3117

Unit Test -II (2025-26)

T.Y. B.Tech.- Robotics & Automation

Course Code: OE363

Course Name: Robotics Engineering and applications

Day & Date: Wednesday 19.09.2025

Time: 10.30-11.30 PM

Max Marks-25

- Instructions: 1) All questions are compulsory.
2) Figures in rounded () brackets within the question, indicate the scheme of marking for respective part of the question, whereas figures in the first right column indicate total marks for that whole question.
3) CO is the index number of the Course Outcome statement.
4) The Bloom's taxonomy level (BL) for 1,2,3,4,5 and 6 is remember, understand, apply, analyze, evaluate and create respectively.
5) Assume suitable data if necessary.
6) Use of non-programmable calculators is allowed.

			Marks	BL	COs
Q.1	A	Explain the evolution of robot-assisted surgery from early systems to the modern da Vinci Surgical System (3). Discuss four key benefits of using robotic surgery compared to traditional surgical methods (3).	6	2	3
	B	Compare different categories of Unmanned Ground Vehicles (UGVs) used in military applications: reconnaissance, combat, logistics, and medical evacuation. Describe the sub-types under each category. (4) Highlight and describe four real-world examples for each type. (3)	7	3	3
OR					
	C	Explain the different types of robots used in space such as planetary rovers, orbit operators, and free-flying robots (2). Discuss the objectives and key technologies of planetary rovers with suitable examples (3). Describe the major sensors and instruments used for exploration and scientific studies, highlighting their functions (2).	7	4	2



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| Q.2 | A | Critically analyze the ethical and social implications of deploying healthcare robots for elderly care and rehabilitation (3). Do you think reliance on robots will reduce human interaction in the long term? Justify briefly (3). | 6 | 5 | 4 |
| | B | Explain and compare different categories of Unmanned Aerial Vehicles (UAVs) used in military applications: reconnaissance, combat and logistics (3). Describe the sub-types under each category and highlight three real-world examples for every type (3). | 6 | 4 | 3 |

