

Enroll No

K.E.Society's
Rajarambapu Institute of Technology, Rajaramnagar
(An Empowered Autonomous Institute, affiliated to SUK)
Unit Test -I (2025-26)

Q.P. Code
UT 2965

S.Y. B.Tech.-Robotics and Automation Engineering
Course Code: RA 209 Course Name: Materials and Manufacturing Technology

Day & Date: Tuesday 12/08/2025
Time: 11:45 To 12:45

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	BT Level	COs
Q.1	A	Explain the effect of crystal structure on optical properties of material.	4	2	CO_1

OR

A	Draw Iron-Iron carbide diagram and explain phase transformations with reaction.	2		CO_1
B	Select the material for following applications and justify your choice i. Cutting tool ii. Food container	4	3	CO_2
C	Compare low carbon steel and High Carbon steel	4	4	CO_1

Q.2	A	List (2) smart materials and explain (2) working principle of magneto strictive materials.	4	2	CO_1
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OR

A	Write characteristics (2) and application (2) of Metallic glass.	2		CO_1
B	List (2) methods of manufacturing of FRP component and explain (2) vaccum infusion method and its applications.	4	3	CO_2
C	Magnesium alloy has good strength and less density even though Why it is not much popular in manufacturing industry for manufacturing variety of components?	5	4	CO_2

