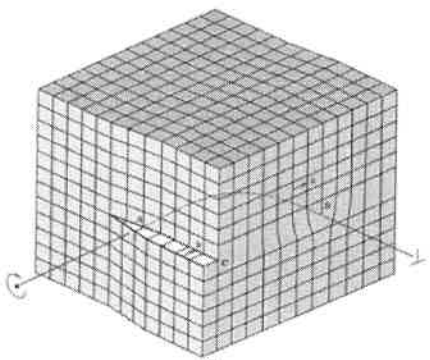
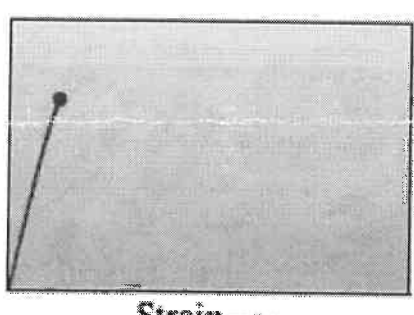


Enrollment No: \_\_\_\_\_

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**B.Tech Mid Semester Exam**

Semester: 4  
 Subject Code: (203103259)  
 Subject Name: (Material Science)

Date: (02/02/2024)  
 Time: (1hr: 30min)  
 Total Marks: 40

Sr. No.		Marks	Co/Po	Blooms Taxonomy
Q.1	<p><b>(A) Five One line Question</b></p> <ol style="list-style-type: none"> <li>1. Mention any three principle ways in which load can be applied to a body.</li> <li>2. What is the unit of Viscosity.</li> <li>3. Mention any 2 thermal properties of material.</li> <li>4. Name 3 basic categories of material.</li> <li>5. Give any 2 examples of ceramic material.</li> </ol>	05	C01/PO1	U
	<p><b>(B) Five Fill in the blanks</b></p> <ol style="list-style-type: none"> <li>1. Deterioration in ceramic material occurs at _____ (high/low) temperature.</li> <li>2. The site at which oxidation takes place is _____</li> <li>3. For Edge Dislocation, burger vectors are _____ (parallel/perpendicular/none)</li> <li>4. Following diagram indicates _____ type of dislocation.</li> </ol>  <p>5. Tensile stress-strain curve for _____ (name the material)</p> 	05	CO2/PO2	A

Q.2	<b>Attempt any four(Short Questions)</b>	12		
	(1) Define the following terms: a) Yield Strength b) Young's Modulus c) Tensile Toughness		CO2/PO2	U
	(2) Explain Ultimate Tensile Strength (UTS) and Necking.		CO2/PO3	R
	(3) Discuss the environmental impact on corrosion.		CO3/PO3	A
	(4) Explain different categories of properties of the material with examples.		CO1/PO1	R
	(5) Explain the concept of Stress and Strain.		CO2/PO2	A
Q.3	<b>Attempt any two questions</b>	08		
	(1) Explain Electrochemical Process with one example.		CO3/PO3	U
	(2) Explain different classification of Point Defect with diagram.		CO2/PO2	R
	(3) Define Primary Interatomic bonding with examples.		CO1/PO1	U
Q.4	(A) A tensile stress is to be applied along the long axis of a cylindrical brass rod that has a diameter of 10 mm (0.4 in.). Determine the magnitude of strain produced in x-direction when load produce a $2.5 \times 10^{-3}$ - mm ( $10^{-4}$ -in.) change in diameter if the deformation is entirely elastic.	05	CO2/PO4	E
	(B) Explain Engineering Stress-Strain curve for Aluminum Alloy.	05	CO2/PO3	A
	OR			
	(B) What is Corrosion. Discuss its types with example.	05	CO3/PO4	A