

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**

**Mid Semester Examination – Oct 2018**

**Course: B. Tech in Mechanical Engineering**

**Sem: III**

**Subject Name: Material Science and Metallurgy**

**Subject Code: BT-MEC 302**

**Max Marks:20**

**Date:- 9/10/18**

**Duration:- 1 Hr.**

**Instructions to the Students:**

1. Assumptions made should be clearly mentioned
2. All the questions are compulsory

	CO	Marks
<b>Q. 1 Attempt all multiple choice questions:</b>		<b>6</b>
1. Eutectic Reaction of Iron carbide system occurs at .....	3	
a) 600°C      b) 723°C      c) 1147°C      d) 1493°C		
2. Cast iron is used for machine beds because of it's high	3	
a) Tensile strength   b) Endurance strength   c) Damping Capacity   d) Ductility		
3. When temperature of solid metal increases its strength..... and ductility.....	3	
a) Decreases, increases                      b) Decreases, decreases		
c) Increases, increases                      d) Increases, decreases		
4. What is surface imperfection, which separates crystals of different orientation in polycrystalline aggregate, called?	1	
a) Edge dislocation      b) stacking fault      c) Grain boundary      d) Inclusion		
5. Endurance limit is related to which of the following test?	2	
a) Fatigue                      b) Torsion                      d) Formability                      d) Creep		
6. Angularity of square based pyramid of Vicker test is?	2	
a) 180°C      b) 136°C      c) 120°C      d) 60°C		
<b>Q.2 Attempt Any Two of the following.</b>		<b>3 X 2</b>
(A) Compare mechanism of slip and twin in metals.	1	
(B) Explain the zero-dimensional defects.	1	
(C) Explain Hume-Ruthery rule of solid solubility.	3	
<b>Q. 3 Attempt Any One of the following.</b>		<b>8</b>
(A) Describe Rockwell hardness test and compare it with Brinell hardness test.	2	
(B) Sketch Iron-Iron carbide diagram and explain important phases and reactions	3	

\*\*\* End \*\*\*