

S. B. Roll. No.....

**ENGINEERING MATERIALS**  
**3<sup>rd</sup> Exam/Mech./3053/Jun'2022**  
**(For 2018 Batch Onwards)**

**Duration: 3Hrs.**

**M.Marks:75**

**SECTION-A**

**Q1. Give answer in one line.**

**15x1=15**

- a. Define strain.
- b. Define brass.
- c. What do you mean by non ferrous materials?
- d. Define factor of safety.
- e. What is superconductivity?
- f. What is fatigue?
- g. Define Hooke's law.
- h. What is crystal structure?
- i. Define unit cell.
- j. What is space lattice?
- k. Define alloy steel.
- l. Define solid solution.
- m. What is polymerization?
- n. What do you mean by composites?
- o. Define heat resisting steels.

**SECTION-B**

**Q2. Attempt any five questions.**

**5x6=30**

- i. Explain briefly the mechanical properties of metals.
- ii. What is the difference between slip and twinning?
- iii. Differentiate between annealing and normalising.
- iv. Discuss the various additives used in plastics.
- v. Give some applications of ceramics.
- vi. Write a short note on non metal bearing materials.

**SECTION-C**

**Q3. Attempt any three questions.**

**3x10=30**

- a. Draw a stress -strain curve and with its help explain all the terms related to this curve.
- b. Explain the detailed process of manufacturing of cast iron.
- c. Describe with a neat sketch the iron-carbon equilibrium diagram.
- d. Explain different types of heat treatment furnaces.
- e. Why plastic coating is done on metal surface? Explain the different methods of plastic coating.