

S.B. Roll No.....

**ENGINEERING MATERIALS**  
**3<sup>rd</sup> Exam/Mech./3053/Feb'2021**  
**(For 2018 batch onwards)**

**Duration: 1.15Hrs.**

**M.Marks:25**

**SECTION-A**

**Q1. Attempt any three questions.**

**3x5=15**

- a. Explain Nitriding Process with its merit and demerits.
- b. Difference between Hot working and Cold working process.
- c. State the effects of adding the following alloying elements to steel: Nickel, Chromium, Manganese, Vanadium, Tungsten, Silicon and Copper.
- d. Explain High Speed Steel, Stainless Steel, Spring Steel and Silicon Steel.
- e. How do Thermoplastics differ from thermosetting materials?
- f. What are the special properties of plastics that make them useful engineering materials?
- g. What is the difference between Normalising and Quenching?

**SECTION-B**

**Q2. Attempt any one question.**

**1x10=10**

- i. Explain the various types of Annealing Process.
- ii. Explain Iron-Carbon Equilibrium Diagram with Sketch.
- iii. Classify the Ceramics and explain its properties and applications.
- iv. Explain the behavior of Mild steel under load using Stress-Strain Diagram.