

Code No: 157EP**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech IV Year I Semester Examinations, February/March - 2022****ENGINEERING MATERIALS****(Common to CE, ME, ECE)****Time: 3 Hours****Max. Marks: 75****Answer any Five Questions
All Questions Carry Equal Marks**

- 1.a) What is HSLA? Explain with respect to composition, properties and applications.
- b) What are the differences between dual phase DP and TRIP steels? [7+8]
- 2.a) TRIP steels are well-suited for automotive structural and safety parts: Give the reasons.
- b) Differentiate between tungsten based and molybdenum based high speed steels. [8+7]
3. Nickel-based super alloys are used extensively in aerospace industries now a days. Enumerate the reasons. [15]
4. Explain the applications and properties of Co based super alloys. [15]
5. What are ferroelectric piezo electric and pyro electric materials and explain in detail the same along with their applications? [15]
6. How do you classify super conducting materials? Explain about superconductivity materials which will be used at higher critical temperatures. [15]
7. Stainless steels are versatile engineering materials. Discuss. [15]
8. Name the important bio-metallic alloys. Explain how these can be used in medical applications? [15]

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