

R18

Code No: 157EP

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, July/August - 2022

ENGINEERING MATERIALS

(Common to CE, EEE, ME, ECE, CSE)

Time: 3 Hours

Max.Marks:75

**Answer any five questions
All questions carry equal marks**

- 1.a) What are dual phase steels. Give examples and their applications.
- b) Classify TRIP steels. Write down their composition, properties and uses. [7+8]
- 2.a) Describe HSLA steels with respect to composition, properties and applications.
- b) Compare maraging and HSS steels. [8+7]
3. Compare alloys and super alloys. Briefly describe cobalt base super alloys. [15]
4. Explain the role of alloying elements in nickel base super alloys. Discuss about inconels. [15]
5. Classify the different electric materials. With help of figures describe the working of semiconductors. [15]
- 6.a) What are super conducting materials and their properties? Classify them and list out their uses.
- b) Give examples of pyro and piezo electric materials and their applications. [8+7]
7. Compare and contrast the ferritic and austenitic stainless steels with respect to types, composition, properties and uses. [15]
8. Explain what is biocompatibility. With two examples describe the applications of bio materials. [15]

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