

Code No: 156DJ**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, February/March - 2022****ALLOY STEELS
(Mechanical Engineering)****Time: 3 hours****Max. Marks: 75****Answer any five questions
All questions carry equal marks**

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- 1.a) Explain in detail about the properties and applications of low carbon steels.
b) Explain how the properties depends on structure/grain size in pearlitic steels. [7+8]
- 2.a) Explain any one strengthening mechanism with neat diagrams.
b) Differentiate between low alloy steels and high alloy steels. [8+7]
- 3.a) Explain the effect of alloying elements in medium carbon steels.
b) Explain the properties and applications of Bainitic steels. [7+8]
- 4.a) Differentiate between low carbon bainitic steels and high carbon bainitic steels.
b) Draw the microstructure of medium carbon steels and explain its properties. [7+8]
- 5.a) Write short notes on thermo-mechanical treatments of steels.
b) Explain about secondary hardening process. [7+8]
- 6.a) Explain the composition, structure and properties of maraging steels.
b) Explain the properties and applications of ultra-high strength steels. [7+8]
- 7.a) Classify stainless steels. Explain about austenitic stainless steels with respect to properties and applications.
b) Explain the type of heat treatment given to stainless steels? Explain them. [7+8]
8. Write short notes on the following:
a) Tool steels
b) Heat resistance steels. [7+8]

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