

Peening of the welds is accomplished by **hammering**

The **formation** of the **graphite** into a **ball** form in ductile cast iron adding **MG and cerium**

No post heat treatment of the weld is recommended if the carbon equivalent CE is **$CE < 0.35$**

Each step in construction a TTT diagram involves **austenizing and quenching** the sample

Bainite is **ferrite and cementite** it's just acicular

They **overaging mechanism** in AL-CU alloys is a **result** of the **distortion in the lattice**

the weldability of plain carbon steel medium and high carbon steels are **good fair poor** respectively

That CCT or that TTT diagrams are used for **one steel of specific composition**

Blow holes in casting are formed because of entrapped gases

MARTEMpering process is usually employed in alloy steels

Which of the following cannot be obtained using a phase diagram **purity of materials**

Which of the following is not a constituent of molding sand **epoxy**

The process that combines I-T and conventional heat treatment together is **MARTEMpering**

The tensile strength TS of steel can be predicted for the steel with a composition after eutectoid composition by the following formula **$TS = 700 \times \%CARBON + 350$**

BAINite is formed as a result of moderate cooling

The recommended heat treatment process for the drive half shaft for a small car is hardening

Annealing temperature is less than normalizing temperature

If the nose of the TTT diagram for an alloy is at the zero time line it is impossible to harden it

AUSTEMPERING forms a bainite structure

DENDRITE can be seen clearly in the microstructure of the castings if the alloy has impurity atoms

The cooling rate for the solution heat treatment process of AL -copper alloys is very fast

Which one of the following is not equilibrium heat treatment precipitation

The main distinct welding zones are weld metal, HAZ, and base metal

Pure iron exists in 3 ALLOTROPIC forms

The solubility limits is can be defined as maximum concentration of salute that can be added

Normalizing is best used for what kind of materials? LOW and medium carbon steel

Lost wax process is used for making items of brass and bronze

The temperature of the formation of Martensite in the CCT is the same as for TTT diagram

The solubility limit is can be defined as **concentration**

The slowest cooling rate is obtained when steel is quenched in **air**

The size of the specimen affects the hardness of steel after heat treatment as follows **smaller size results are high hardness**

Which one of the following is not correct **martensite has a BCC structure**

The addition of Mn to plain carbon steel changes **the shape of phase field, the position of the boundaries of the face, the value of the eutectoid temperature**

We can get tempered martensite **if we reheat Martensite**

BAINITIC microstructure in eutectoid plain carbon steel can be formed by using continuous cooling..... **The cooling rate goes before the critical point**

method of getting a mixture of pearlite p and bainite & martensite m in an eutectoid steel
Cooling to a temperature above the border line of P and B, crossing the transtormation starts line and soaking to a certain time, cooling it to below the border line, soaking to a certain time but not to cross the transtormation ends line, then quenching

Removal of internal residual stresses at high temperatures is known as **recovery**

Non equilibrium phases are shown for their time and transformation using **TTT and CCT diagram**

Annealing of castings consists of the following **sequence austenizing the solid product and then cooling it to lower critical temperature**

What makes the molding sand refractory **silica**

The Recommended heat treatment process for the car body is **annealing**

Blowholes in casting are formed because of **entrapped gases**

That solubility limit is can be defined as **maximum concentration of solute that can be added**

the CCT or the TTT diagrams are used for **one steel of specific composition**

Austenite is **a solid solution of iron and carbon**

Which tempering process is used to increase the endurance and elastic limit of the material
medium temperature tempering medium


Which of the following is a nonmagnetic iron **austenite**

The Ms temperature on the TTT diagram is a function of carbon content as follows **the higher the % C, the lower the Ms temperature**

the recommended heat treatment process for the hacksaw is **normalizing + hardening**

MINERAL oils are used in the hardening process of **alloy steel**

How can cracks in casting we avoided **tapered edges**

The absence of time effect on the face diagram  **gives an opportunity to get a wide range of properties**

The cooling rate for the precipitation heat treatment process of al-copper alloys is **no matter**

Annealing of castings consists of the following sequence austenizing the solid product and then cooling it to lower critical temperature

$L (4.3\% C) = \gamma (2.0\%) + Fe_3C (6.69\% C)$ is eutectic reaction

Flush quenching is when the liquid is poured onto the surface and into every cavity of the part at the same time to ensure uniform cooling

That ascending order of strength based on microstructure is

SPHERODITE, T martinsite, Martensite