

## Assignment 9

1) The hardness of martensite in steel is a function of

1 point

- C content
- Cooling rate
- Ni content
- nose location

**Accepted Answers:**

*C content*

2) Martensite transformations

1 point

- are diffusion controlled
- are shear process
- yield two product of different compositions
- none of these

**Accepted Answers:**

*are shear process*

3) The c/a ratio of martensite depends on the concentration of

1 point

- Ni
- Mn
- C
- N

**Accepted Answers:**

*C*

4) Bainite has

1 point

- the same morphology as austenite
- a non-lamellar morphology of ferrite and cementite
- the coarser morphology among all the product from austenite
- none of these

**Accepted Answers:**

*a non-lamellar morphology of ferrite and cementite*

5) When austenite is cooled to large supersaturations below the nose of the pearlite transformation curve a new eutectoid product called

1 point

- Martensite
- Bainite
- pearlite
- Retained austenite

**Accepted Answers:**

*Bainite*

6) Formation of martensite is a \_\_\_\_\_ transformation.

1 point

- shear
- displacive
- diffusionless
- all of the above
- none of the above

**Accepted Answers:**

*all of the above*

7) In which of the following case, we get bainite ?

1 point

- slow cooling from 900 degree Celsius to room temperature in a water bath
- fast cooling from 900 degree Celsius to room temperature in a water bath
- quench from 900 degree Celsius to 400 degree Celsius in an oil bath and holding it for long time
- none of these

**Accepted Answers:**

*quench from 900 degree Celsius to 400 degree Celsius in an oil bath and holding it for long time*

8) Martensite has \_\_\_\_\_ structure.

1 point

- lenticular
- irregular
- cuboidal
- leaf like

**Accepted Answers:**

*lenticular*

9) Bainite has \_\_\_\_\_ structure.

1 point

- lenticular
- leaf like
- cuboidal
- basket weave

**Accepted Answers:***leaf like*

10 Crystal structure of austenite and martensite are \_\_\_\_\_ and \_\_\_\_\_ respectively.

**1 point**

- BCC, BCT
- FCC, BCC
- FCC, BCT
- BCT, FCC

**Accepted Answers:***FCC, BCT*