1.1) A carbon steel with 1.13 wt % C is given the following heat treatment: instantaneously quenched to 200°C held for 1 day cooled slowly to room temperature. What is the resulting microstructure?

- 90% Bainite, 10% Martensite
- 90% Bainite, 10% Pearlite
- 100% Bainite
- None of these

No, the answer is incorrect.
Score: 0
Accepted Answers:
100% Bainite
1.2) What microstructure would result if a carbon steel with 0.5 wt % were given the exact same heat treatment as in question 1?

- 90% Martensite, 10% Fine Pearlite
- 90% Martensite, 10% Coarse Pearlite
- 100% Martensite
- 100% Bainite

No, the answer is incorrect.
Score: 0
Accepted Answers:
90% Martensite, 10% Coarse Pearlite

1.3) Three different eutectoid steels are given the following heat treatments:

A. Instantaneously quenched to 600°C, held for 2 minutes, cooled to room temperature.
B. Instantaneously quenched to 400°C, held for 2 minutes, cooled to room temperature.
C. Instantaneously quenched to 100°C, held for 2 minutes, cooled to room temperature.

List these heat treatments in order of decreasing hardness of the final product.

- A>C>B
- B>A>C
- C>B>A
- A>B>C

No, the answer is incorrect.
Score: 0
Accepted Answers:
C>B>A

4) Why is white cast iron not used for any application?

- It is brittle due to presence of Fe₃C
- It is difficult to manufacture
- It is very costly to produce and thus is not on a large scale
- None of these

No, the answer is incorrect.
Score: 0
Accepted Answers:
It is brittle due to presence of Fe₃C
5) What does the matrix of grey iron contain?

- Pearlite
- Ferrite
- Either A or B
- None of these

No, the answer is incorrect.
Score: 0
Accepted Answers:
Either A or B

6) Why Mg-Ni alloy is added to Nodular cast iron?

- To increase its hardness
- To increase its toughness
- To decrease its melting point
- To increase its tensile ductility

No, the answer is incorrect.
Score: 0
Accepted Answers:
To increase its tensile ductility

7) How does martensite form?

- By diffusionless transformation
- Through the help of various diffusion processes
- Can't Say

No, the answer is incorrect.
Score: 0
Accepted Answers:
By diffusionless transformation

8) Which type of cast iron will be formed if it as fast cooled?

- ferritic ductile cast iron
- ferritic grey cast iron
- pearlitic grey cast iron
- white cast iron

No, the answer is incorrect.
Score: 0
Accepted Answers:
white cast iron

9) What is the use of silicon in cast iron?

- to improve its mechanical properties
- to control the formation of graphite phase
- to improve its remarkable electrical properties
- None of these

No, the answer is incorrect.
Score: 0
Accepted Answers:
to control the formation of graphite phase

10) Which type of cast iron will be formed if it a white cast iron is reheated to 850°C for 36 hr and then slowly cooled?

- White Cast iron
- ferritic malleable iron
- pearlitic malleable iron
- None of these
No, the answer is incorrect.

Score: 0

Accepted Answers:
ferritic malleable iron