



Question 17

Not yet answered

Marked out of 2.00

Flag question

The recommended heat treatment process for the hacksaw is:

Select one:

- ☒ a. Hardening
- ☐ b. annealing
- ☐ c. Normalizing
- ☐ d. Normalizing+hardening

Clear my choice

Question 18

Not yet answered

Marked out of 2.00

Flag question

If the nose of the TTT diagram for an alloy is at the zero time line,

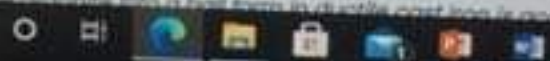
Select one:

- ☐ a. It is difficult to harden it
- ☐ b. Special furnace is needed to harden it
- ☐ c. It is impossible to harden it
- ☐ d. It would be easy to harden it

Question 19

The formation of the carbide into a ball form with some time is recommended for

Type here to search



- ☐ c. is magnetized
- ☐ d. is radio active

[Clear my choice](#)

Question 8

Not yet
answered

Marked out of
1.00

Flag
Question

1. *The limitation of the phase diagram for heat treatment purposes is that*

Select one:

- ☐ a. it does not show the effect of cooling rate
- ☐ b. Austenite does not exist at room temperature
- ☐ c. it does not show the bainite
- ☐ d. it is used only for plain carbon steel

Question 9

Answer saved

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1.00

The cooling rate for the precipitation heat treatment process of Al-copper alloys is.

Question 8

Not yet
answered

Marked out of
3.00

Flag
question

The severity of quenching media from low to high can be ranked as follows:

Select one:

- ☐ a. insulating material or furnace, air, vegetable oil, animal oil, mineral oil, warm water, cold water, 20% brine, 5% caustic soda
- ☐ b. 5% caustic soda, 20% brine, cold water, animal oil, warm water, animal oil, mineral oil, vegetable oil, air, insulating material or furnace
- ☐ c. insulating material or furnace, air, vegetable oil, animal oil, mineral oil, cold water, warm water, 20% brine, 5% caustic soda
- ☐ d. 5% caustic soda, cold water, 20% brine, warm water, animal oil, mineral oil, vegetable oil, air, insulating material or furnace.

Question 9

Not yet
answered

Marked out of
3.00

Flush quenching is when:

Select one:

- ☐ a. the liquid is sprayed onto the surface and into every cavity of the part at the same time to ensure

Activate Windows
Go to Settings to activate Windows

quenching

[Clear my choice](#)

Question 10

Answer saved

Marked out of
2.00

Flag
question

The recommended heat treatment process for the hacksaw is:

Select one:

- ☒ a. hHardening
- ☐ b. Normalizing
- ☐ c. annealing
- ☐ d. Normalizing+harening

[Clear my choice](#)

METALLURGICAL PROCESSES

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METALLURGICAL PROCESSES

16 August - 22 August

Question 6

Answer saved

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The recommended heat treatment process for the hacksaw is:

Select one:

- ☐ a. annealing
- ☐ b. Normalizing+hardening
- ☒ c. hHardening
- ☐ d. Normalizing

[Clear my choice](#)

Dendrite can be seen clearly in the microstructure of the castings if the alloy:

Select one:

is pure

is impurity atoms

DELL

[Clear my choice](#)

The temperature of the formation of martensite in the CCT:

Select one:

- ☐ a. is more than that for TTT diagram
- ☒ b. is the same as for TTT diagram
- ☐ c. is shifted to the right
- ☐ d. is less than that for TTT diagram

[Clear my choice](#)

The cooling rate for the solution heat treatment process of Al-copper

Select one:

- ☐ a. slow
- ☒ b. Very fast
- ☐ c.]moderate
- ☐ d. no matter

Answer saved

Marked out of
2.00

Flag
question

The body centered tetragonal crystal structure is:

Select one:

- ☐ a. when $a=b=c$ and has an atom in the center
- ☐ b. when $a=b=c$ and has an atom in the center and another on the surface
- ☐ c. when $a=b=c$ and has an atom on the surface
- ☒ d. when $a=b \neq c$ and has an atom in the center

[Clear my choice](#)

Time left 0:09:03

Question 3

Answer saved

Marked out of
2.00

Flag
question

The hardenability is not affected by

Select one:

- ☐ a. quenching medium and method of
- ☒ b. air
- ☐ c. critical cooling rate
- ☐ d. chemical composition of steel

[Clear my choice](#)

a. cooling to a temperature below the border line of P and B, crossing the transformation starts line and soaking to a certain time, soaking to a certain time but not cross the transformation ends line, then quenching

[Clear my choice](#)

Question 15

Answer saved

Marked out of
2.00

Flag
question

No post heat treatment of the weld is recommended if the carbon equivalent (CE) is:

Select one:

- ☒ a. $CE < 0.35$
- ☐ b. $0.35 < CE < 0.55$
- ☐ c. $0.55 < CE$
- ☐ d. A and B

[Clear my choice](#)

- ☒ d. It is Ferrite and Cementite! It's just acicular

[Clear my choice](#)

No post heat treatment of the weld is recommended if the carbon equivalent (CE) is:

Select one:

- ☒ a. $CE < 0.35$
- ☐ b. $0.35 < CE < 0.55$
- ☐ c. $0.55 < CE$
- ☐ d. A and B

[Clear my choice](#)

The recommended heat treatment process for the hacksaw is:



Question 19

Not yet answered

Marked out of 2.00

Flag question

The formation of the graphite into a ball form in ductile cast iron is accomplished by.

Select one:

- ☒ a. Mg and Cerium
- ☐ b. Mo and Cerium
- ☐ c. Adding Mn and Cerium

[Clear my choice](#)

Question 20

Not yet answered

Marked out of 2.00

Flag question

Weldability of Plain carbon steel, medium, and High carbon steels are.

Select one:

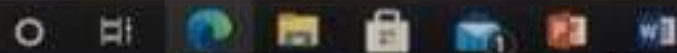
- ☐ a. Fair, good, poor respectively
- ☐ b. Good, poor, fair respectively
- ☐ c. Good, fair, fair respectively
- ☒ d. Good, fair, poor respectively

[Clear my choice](#)

[Previous page](#)

[Next page](#)

Type here to search



The recommended heat treatment process for the Drive half-shaft for a small car is:

Select one:

- ☐ a. normalizing
- ☐ b. normalizing + hardening
- ☒ c. Annealing
- ☐ d. hardening

[Clear my choice](#)

The Ms temperature on the TTT diagram is a function of carbon content as follows.

Question 6

Not yet
answered

Marked out of
3.00

Flag
question

The bonding energy for ionic, metallic, secondary types can be classified respectively as follows.

Select one:

- ☐ a. small, large, variable
- ☐ b. variable, variable, small
- ☐ c. large, variable, small
- ☐ d. variable, large, small

Question 7

Not yet
answered

Marked out of
3.00

Flag
question

The crystalline structure of α -non magnetic, and α -magnetic are.

Select one:

- ☐ a. BCC, BCC respectively
- ☐ b. FCC, FCC respectively
- ☐ c. FCC, BCC respectively
- ☐ d. BCC, FCC respectively

Quiz navigation

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	

Finish attempt ...

Time left 0:34:10

Activate Windows
Go to Settings to activate Windows

The hardenability is not affected by

Select one:

- ☐ a. quenching medium and method of
- ☐ b. air
- ☐ c. critical cooling rate
- ☐ d. chemical composition of steel

The temperature of the formation of martensite in the CCT:

Select one:

- ☐ a. is the same as for TTT diagram
- ☐ b. is shifted to the right
- ☐ c. is less than that for TTT diagram
- ☐ d. is more than that for TTT diagram



[Clear my choice](#)

Which one of the following is not equilibrium heat treatment

Select one:

- ☐ a. Austenizing
- ☐ b. annealing
- ☒ c. precipitation
- ☐ d. normalizing

[Clear my choice](#)

The slowest cooling rate is obtained when steel is quenched in

Select one:

- ☐ a. mixture of oil and water
- ☐ b. fused salt
- ☒ c. air
- ☐ d. brine

[Clear my choice](#)

- ☐ b. Normalizing+hardening
- ☐ c. hHardening
- ☐ d. Normalizing

[Clear my choice](#)

Question 7

Answer saved

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2.00

🚩 Flag
question

Dendrite can be seen clearly in the microstructure of the castings if the alloy:

Select one:

- ☐ a. is pure
- ☒ b. has impurity atoms
- ☐ c. is magnetized
- ☐ d. is radio active

[Clear my choice](#)

Question 8

Not yet
answered

Marked out of
2.00

1. *The limitation of the phase diagram for heat treatment purposes is that.*

Select one:

Question 3

Not yet
answered

Marked out of
2.00

Flag
question

Which one of the following is not correct

Select one:

- ☐ a. Austenite has FCC structure
- ☐ b. Martensite is a solid solution of carbon in BCC iron
- ☐ c. The martensite which is formed during quenching is too brittle
- ☐ d. Martensite has a BCC structure

Question 4

Not yet
answered

Marked out of
2.00

Flag
question

If the nose of the TTT diagram for an alloy is at the zero time line,

Select one:

- ☐ a. it is impossible to harden it
- ☐ b. It is difficult to harden it
- ☐ c. Special furnace is needed to harden it
- ☐ d. It would be easy to harden it

Question 5

Answer saved

Annealing temperature is:

Question 3

Not yet
answered

Marked out of
3.00

Flag
question

If the nose of the TTT diagram is for an alloy at the zero time line

Select one:

- ☐ a. Special furnace is needed to harden it
- ☐ b. It would be easy to harden it
- ☐ c. It is difficult to harden it
- ☐ d. it is impossible to harden it

Question 4

Not yet
answered

Marked out of
3.00

Flag
question

The temperature of the formation of martensite in the CCT:

Select one:

- ☐ a. is more than that for TTT diagram
- ☐ b. is shifted to the right
- ☐ c. is less than that for TTT diagram
- ☐ d. is the same as for TTT diagram

Activate Windows
Go to Settings to activate Windows.

The ascending order of strength based on microstructure is:

Select one:

- ☐ a. fine pearlite, bainite, T martensite
- ☐ b. Martensite, spherodite, fine pearlite
- ☐ c. Spherodite, Tmartensite, martensite
- ☐ d. T martensite, bainite, fine pearlite

Bainitic microstructure in eutectoid plain carbon steel can be formed by using continuous cooling diagram if

Select one:

- ☐ a. the cooling rate passes through the critical point
- ☐ b. none of the choices
- ☐ c. the cooling rate goes before the critical point
- ☐ d. the cooling rate goes after the critical point

Quiz navigation

1	2	3	4	5
7	8	9	10	11
13	14	15	16	17

Finish attempt ...

Time left 0:34:46

Activate Windows
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if the nose of the TTT diagram is for an alloy at the zero time line

Question 13

Not yet
answered

Marked out of
2.00

Flag
question

The formation of the graphite into a ball form in ductile cast iron is accomplished by.

Select one:

- ☒ a. Mg and Cerium
- ☐ b. Adding Mn and Cerium
- ☐ c. Mo and Cerium

[Clear my choice](#)

Question 14

Not yet
answered

Marked out of
2.00

Flag
question

The overaging mechanism in Al-Cu alloys is.

Select one:

- ☐ a. A result of the perfection in the lattice
- ☒ b. A result of the distortion in the lattice
- ☐ c. A result of the formation of a Ms-like structure
- ☐ d. A result of Alpha phase formation

[Clear my choice](#)

- ☐ c. It is Ferrite and Cementite! It's just acicular
- ☒ d. It is a solid solution of iron and carbon

[Clear my choice](#)

The hardenability is not affected by

Select one:

- ☐ a. air
- ☒ b. critical cooling rate
- ☐ c. quenching medium and method of
- ☐ d. chemical composition of steel

[Clear my choice](#)

page

exam Metallurgy

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Question 9

Answer saved

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question

If the nose of the TTT diagram for an alloy is at the zero time line,

Select one:

- ☐ a. Special furnace is needed to harden it
- ☐ b. It would be easy to harden it
- ☒ c. it is impossible to harden it
- ☐ d. It is difficult to harden it

[Clear my choice](#)

Question 10

Answer saved

Marked out of
2.00

Flag
question

The body centered tetragonal crystal structure is:

Select one:

- ☐ a. when $a=b=c$ and has an atom in the center and another on the surface
- ☒ b. when $a=b \neq c$ and has an atom in the center
- ☐ c. when $a=b=c$ and has an atom on the surface
- ☐ d. when $a=b=c$ and has an atom in the center

[Clear my choice](#)

☐ d. A result of Alpha phase formation

[Clear my choice](#)

Question 25

Answer saved

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2.00

🚩 Flag
question

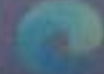
The recommended heat treatment process for the car body is:

Select one:

- ☐ a. normalizing + hardening
- ☐ b. normalizing
- ☒ c. annealing
- ☐ d. Hardening

[Clear my choice](#)

Type here to search



METALLURGICAL PROCESSES

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METALLURGICAL PROCESSES

Final exam Metallurgy

Final exam metallurgy

Bainitic microstructure in eutectoid plain carbon steel can be formed by using continuous cooling

Select one:

- ☒ a. the cooling rate goes after the critical point
- ☐ b. none of the choices
- ☐ c. the cooling rate goes before the critical point
- ☐ d. the cooling rate passes through the critical point

[Clear my choice](#)

The cooling rate for the precipitation heat treatment process of Al-copper alloys is.

Select one:

- ☒ a. no matter
- ☐ b. slow



[Clear my choice](#)

Question 3

Not yet
answered

Marked out of
2.00

Flag
question

Weldability of Plain carbon steel, medium, and High carbon steels are:

Select one:

- ☒ a. Good, fair, poor respectively
- ☐ b. Good, poor, fair respectively
- ☐ c. Good, fair, fair respectively
- ☐ d. Fair, good, poor respectively

[Clear my choice](#)

Question 4

The tensile strength (TS) of steel can be predicted for the steel with a composition till eute

☐ d. brine

[Clear my choice](#)

Question 7

Not yet
answered

Marked out of
2.00

Flag
question

The formation of the graphite into a ball form in ductile cast iron is accomplished by.

Select one:

- ☒ a. Mg and Cerium
- ☐ b. Mo and Cerium
- ☐ c. Adding Mn and Cerium

[Clear my choice](#)

Question 8

Not yet

The hardenability is not affected by



[Clear my choice](#)

Question 17

Not yet
answered

Marked out of
2.00

Flag
question

The fastest cooling rate is achieved when steel is quenched in

Select one:

- ☒ a. brine
- ☐ b. air
- ☐ c. oil
- ☐ d. water

[Clear my choice](#)

Question 18

Not yet
answered

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2.00

Flag

The recommended heat treatment process for the car body is:

Select one:

- ☐ a. normalizing + hardening

Clear my choice

1. ***The limitation of the phase diagram for heat treatment purposes is that***

Select one:

- ☒ a. Austenite does not exist at room temperature
- ☐ b. it is used only for plain carbon steel
- ☐ c. it does not show the bainite
- ☐ d. it does not show the effect of cooling rate

Clear my choice

3 Dendrite can be seen clearly in the microstructure of the castings if the alloy:

[Clear my choice](#)

Question 7

Answer saved

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2.00

Flag
question

The recommended heat treatment process for the car body is:

Select one:

- ☒ a. annealing
- ☐ b. normalizing
- ☐ c. Hardening
- ☐ d. normalizing + hardening

[Clear my choice](#)

Question 8

Austenite is:

Clear my choice

Austenite is:

Select one:

- ☐ a. It is the mixture of ferrite and cementite
- ☐ b. It is very hard and brittle
- ☐ c. It is Ferrite and Cementite! It's just acicular
- ☒ d. It is a solid solution of iron and carbon

Clear my choice

The hardenability is not affected by

Select one:

- ☒ a. air
- ☐ b. critical cooling rate
- ☐ c. quenching medium and method of
- ☐ d. chemical composition of steel

search



Not yet
answered

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Flag
question

1. *The limitation of the phase diagram for heat treatment purposes is that*

Select one:

- ☐ a. it is used only for plain carbon steel
- ☐ b. it does not show the bainite
- ☐ c. it does not show the effect of cooling rate
- ☐ d. Austenite does not exist at room temperature

Question 22

Not yet
answered

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Flag
question

The cooling rate for the precipitation heat treatment process of Al-copper alloys is.

Select one:

- ☐ a. very fast
- ☐ b. slow
- ☐ c. no matter
- ☐ d. moderate

Quiz navigation



Finish attempt ...

Time left 0:15:06

The recommended heat treatment process for the Drive half-shaft for a small car is:

Select one:

- ☐ a. normalizing
- ☐ b. normalizing + hardening
- ☒ c. Annealing
- ☐ d. hardening

[Clear my choice](#)

The M_s temperature on the TTT diagram is a function of carbon content as follows.

أسئلة طرحها الآخرون



Why bainite does not form during continuous cooling in plain carbon steel?



How is bainite formed?

Bainite forms by the decomposition of austenite at a temperature which is above M_S but below that at which fine pearlite forms. All **bainite** forms below the T_0 temperature.

lecture6 < www.phase-trans.msm.cam.ac.uk

Bainite in Steels - Phase Transformations

How is bainite formed? البحث عن:



What is TTT diagram for eutectoid steel?

Question 4

Not yet
answered

Marked out of
2.00

Flag
question

The tensile strength (TS) of steel can be predicted for the steel with a composition till eutectoid composition by the following formula:

Select one:

- ☒ a. $TS = 700 \times \% \text{carbon} + 350$
- ☐ b. $TS = 750 \times \% \text{carbon} + 350$
- ☐ c. $TS = 750 \times \% \text{carbon} + 300$
- ☐ d. $TS = 700 \times \% \text{carbon} + 300$

[Clear my choice](#)



Not yet
answered
Marked out of
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question

Select one:

- ☐ a. Weld metal, and Knife effect in Base metal
- ☐ b. Weld metal, HAZ, and Knife effect in Base metal
- ☒ c. Weld metal, HAZ, and Base metal
- ☐ d. HAZ and Knife effect in Base metal

Clear my choice

Question 12

Not yet
answered
Marked out of
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question

The recommended heat treatment process for the Drive half-shaft for a small car is:

Select one:

- ☒ a. hardening
- ☐ b. normalizing + hardening
- ☐ c. Annealing
- ☐ d. normalizing

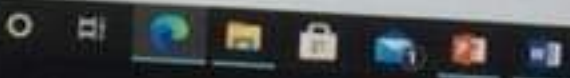
Clear my choice

Question 13

Not yet
answered

The body centered tetragonal crystal structure is

Type here to search



transformation ends line, then quenching

- ☐ d. Cooling to a temperature below the border line of P and B, crossing the transformation starts line and soaking to a certain time, then quenching

The main distinct welding zones are:

Select one:

- ☐ a. Weld metal, and Knife effect in Base metal
- ☐ b. HAZ and Knife effect in Base metal
- ☒ c. Weld metal, HAZ, and Base metal
- ☐ d. Weld metal, HAZ, and Knife effect in Base metal

[Clear my choice](#)

The hardenability is not affected by

Select one:

METALLURGICAL PROCESSES

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Question 1

Not yet
answered

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2.00

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question

The main methods to correct the microstructure of castings are:

Select one:

- ☐ a. annealing
- ☐ b. hardening
- ☐ c. normalizing
- ☐ d. A and C

Question 2

Not yet
answered

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3.00

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Type of sand, which is preferred by most foundries:

Select one:

- ☐ a. synthetic
- ☐ b. mix of them



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The recommended heat treatment process for the car body is:

Select one:

- ☐ a. normalizing + hardening
- ☐ b. normalizing
- ☐ c. annealing
- ☒ d. Hardening

[Clear my choice](#)

Question 4

Answer saved

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Question

Dendrite can be seen clearly in the microstructure of the castings if the alloy:

Select one:

- ☐ a. is radio active
- ☒ b. has impurity atoms
- ☐ c. is pure
- ☐ d. is magnetized

[Clear my choice](#)

Question 5

Answer saved

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The recommended heat treatment process for the car body is:

[Clear my choice](#)

Annealing temperature is:

Select one:

- ☐ a. greater than normalizing temperature
- ☐ b. same as normalizing temperature
- ☒ c. sometimes greater and sometimes lesser than
- ☐ d. less than normalizing temperature

[Clear my choice](#)

Which one of the following is not equilibrium heat treatment?

Select one:

- ☐ a. Austenizing
- ☐ b. annealing
- ☒ c. precipitation
- ☐ d. normalizing

[Clear my choice](#)

☐ d. none of the choices

[Clear my choice](#)

Spherodite microstructure in eutectoid plain carbon steel can be formed by using isothermal transformation process if

Select one:

- ☐ a. cooled to above the critical temperature or lower to it and left for 10^4 seconds
- ☐ b. cooled to lower the critical temperature only and left for 10^4 seconds
- ☐ c. cooled to the critical temperature only and left for 10^4 seconds
- ☐ d. cooled to above the critical temperature only and left for 10^4 seconds

Type of sand, which is preferred by most foundries:

Select one:

- ☐ d. it is impossible to harden it

Question 15

Not yet
answered

Marked out of
2.00

Flag
question

No post heat treatment of the weld is recommended if the carbon equivalent (CE) is:

Select one:

- ☐ a. $CE < 0.35$
- ☒ b. $0.35 < CE < 0.55$
- ☐ c. $0.55 < CE$
- ☐ d. A and B

[Clear my choice](#)

[Previous page](#)

[Next page](#)

Type here to search



[Clear my choice](#)

Question 19

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ag
Question

Which one of the following is not equilibrium heat treatment

Select one:

- ☐ a. annealing
- ☐ b. precipitation
- ☐ c. normalizing
- ☐ d. Austenizing

Question 20

ver saved

The tensile strength (TS) of steel can be predicted for the steel with a composition till eutectoid composition by the following formula:

Clear my choice

The recommended heat treatment process for the hacksaw is:

Select one:

- ☐ a. annealing
- ☐ b. Normalizing
- ☒ c. Normalizing+hardening
- ☐ d. hHardening

Clear my choice





Question 6
Not yet answered
Marked out of 2.00
Flag question

The slowest cooling rate is obtained when steel is quenched in

Select one:

- ☒ a. air
- ☐ b. fused salt
- ☐ c. brine
- ☐ d. mixture of oil and water

[Clear my choice](#)

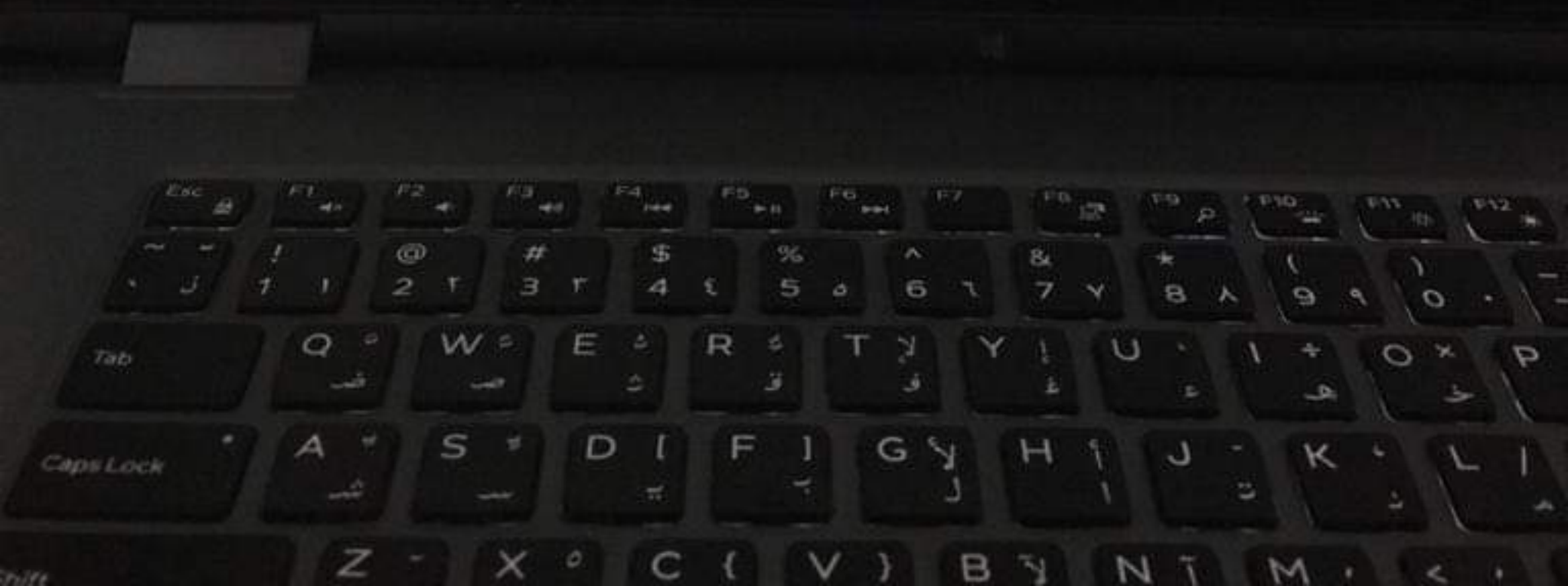
Question 7
Not yet answered
Marked out of 2.00
Flag question

Annealing temperature is:

Select one:

- ☐ a. same as normalizing temperature
- ☐ b. greater than normalizing temperature
- ☒ c. less than normalizing temperature
- ☐ d. sometimes greater and sometimes lesser than normalizing temperature

[Clear my choice](#)



Question 4

Not yet
answered

Marked out of
1.00

Flag
question

Flush quenching is when:

Select one:

- ☐ a. the liquid is poured onto the surface and into every cavity of the to ensure uniform cooling
- ☐ b. the liquid is sprayed onto the surface and into every cavity of the to ensure uniform cooling
- ☐ c. none of the choices
- ☐ d. you cool the metal in a tank of liquid

Question 5

Not yet
answered

Marked out of
3.00

Flag
question

6. The overaging mechanism in Al-Cu alloys is:

Select one:

- ☐ a. A result of Alpha phase formation
- ☐ b. A result of the perfection in the lattice
- ☐ c. A result of the formation of a Ms-like structure



Question 20

Answer saved

Marked out of
2.00

Flag
question

Bainite is:

Select one:

- ☒ a. It is Ferrite and Cementite! It's just acicular
- ☐ b. It is a solid solution of iron and carbon
- ☐ c. It is very hard and brittle
- ☐ d. It is the mixture of ferrite and cementite

[Clear my choice](#)





Question 9

Not yet answered

Marked out of 3.00

Flag question

Flush quenching is when:

Select one:

- ☐ a. the liquid is sprayed onto the surface and into every cavity of the part at the same time to ensure uniform cooling
- ☐ b. none of the choices
- ☐ c. the liquid is poured onto the surface and into every cavity of the part at the same time to ensure uniform cooling
- ☐ d. you cool the metal in a tank of liquid

Question 10

Not yet answered

Marked out of 3.00

Flag question

The thickness of the shell in shell molding casting process is determined by:

Select one:

- ☐ a. the time that the pattern in contact with the mold
- ☐ b. the heating up time that is needed to raise the temperature of the pattern in contact with the mold
- ☐ c. A and B
- ☐ d. the mounted pattern should be heated to 379 °C

Activate Windows
Go to Settings to activate Windows.



12:33 PM
5/13/2020

Question 4

Answer saved

Marked out of

1.00

Flag

Question

The temperature of the formation of martensite in the CCT:

Select one:

- ☒ a. is the same as for TTT diagram
- ☐ b. is shifted to the right
- ☐ c. is less than that for TTT diagram
- ☐ d. is more than that for TTT diagram

[Clear my choice](#)

Question 5

Answer saved

Marked out of

2.00

Flag

Question

The recommended heat treatment process for the car body is:

Select one:

- ☒ a. annealing

Question 11

Not yet
answered

Marked out of
3.00

Flag
Question

If the nose of the TTT diagram is for an alloy at the zero time line

Select one:

- ☐ a. it is impossible to harden it
- ☐ b. Special furnace is needed to harden it
- ☐ c. It would be easy to harden it
- ☐ d. It is difficult to harden it

Question 12

Not yet
answered

Marked out of
3.00

Flag
Question

The bonding energy for ionic, metallic, secondary types can be classified respectively follows.

Select one:

- ☐ a. variable, variable, small
- ☐ b. variable, large, small
- ☐ c. small, large, variable
- ☐ d. large, variable, small



Question 2

yet
answered
marked out of

Flag
Question

Type of sand, which is preferred by most foundries:

Select one:

- ☐ a. synthetic
- ☐ b. mix of them
- ☐ c. none of the choices
- ☐ d. Natural

Question 3

yet
answered
marked out of

Flag
Question

The ascending order of strength based on microstructure is:

Select one:

- ☐ a. fine pearlite, bainite, T martensite
- ☐ b. Spherodite, Tmartensite, martonsite
- ☐ c. Martensite, spherodite, fine pearlite
- ☐ d. T martensite, bainite, fine pearlite

Question 4

yet

Flush quenching is when:



METALLURGICAL PROCESSES

My courses

METALLURGICAL PROCESSES

16 August -

Bainite is:

Select one:

- ☐ a. It is a solid solution of iron and carbon
- ☐ b. It is the mixture of ferrite and cementite
- ☒ c. It is Ferrite and Cementite! It's just acicular
- ☐ d. It is very hard and brittle

[Clear my choice](#)

Which one of the following is not correct

Select one:

- ☒ a. Martensite has a BCC structure
- ☐ b. The martensite which is formed during quenching is too b

earch



Question 5

Not yet
answered

Marked out of
3.00

Flag
question

A result of the formation of a Ms -like structure

Select one:

- ☒ a. Mg and Cerium
- ☐ b. Mo and Cerium
- ☐ c. Adding Mn and Cerium
- ☐ d. Mn and Mo

[Clear my choice](#)

[◀ News forum](#)

Jump to...

Next page

- ☐ c. oil
- ☐ d. water

[Clear my choice](#)

Question 18

Not yet
answered

Marked out of
2.00

Flag
question

The recommended heat treatment process for the car body is:

Select one:

- ☐ a. normalizing + hardening
- ☐ b. annealing
- ☐ c. normalizing
- ☐ d. Hardening

Question 19

Not yet
answered

Marked out of
2.00

No post heat treatment of the weld is recommended if the carbon equivalent (CE) is:

Select one:

[Clear my choice](#)

Question **20**

Answer saved

Marked out of
2.00

🚩 Flag
question

Which one of the following is not correct

Select one:

- ☒ a. Martensite has a BCC structure
- ☐ b. Austenite has FCC structure
- ☐ c. The martensite which is formed during quenching is too brittle
- ☐ d. Martensite is a solid solution of carbon in BCC iron

[Clear my choice](#)

[Previous page](#)

Question 5

Not yet
answered

Marked out of
3.00

Flag
question

Type of sand, which is preferred by most foundries:

Select one:

- ☐ a. none of the choices
- ☐ b. Natural
- ☐ c. synthetic
- ☐ d. mix of them

Next page

◀ News forum

Jump to...

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Bainitic microstructure in eutectoid plain carbon steel can be formed by using continuous cooling diagram if

Select one:

- ☐ a. the cooling rate goes after the critical point
- ☐ b. the cooling rate passes through the critical point
- ☐ c. the cooling rate goes before the critical point
- ☐ d. none of the choices

Spherodite microstructure in eutectoid plain carbon steel can be formed by using isothermal transformation process if

Select one:

- ☐ a. cooled to above the critical temperature or lower to it and left for 10^4 seconds
- ☐ b. cooled to lower the critical temperature only and left for 10^4 seconds
- ☐ c. cooled to the critical temperature only and left for 10^4 seconds
- ☐ d. cooled to above the critical temperature only and left for 10^4 seconds



Question 3

Not yet answered

Marked out of 2.00

Flag question

The fastest cooling rate is achieved when steel is quenched in

Select one:

- ☐ a. air
- ☐ b. water
- ☐ c. oil
- ☒ d. brine

Clear my choice

Question 4

Not yet answered

Marked out of 2.00

Flag question

Dendrite can be seen clearly in the microstructure of the castings if the alloy

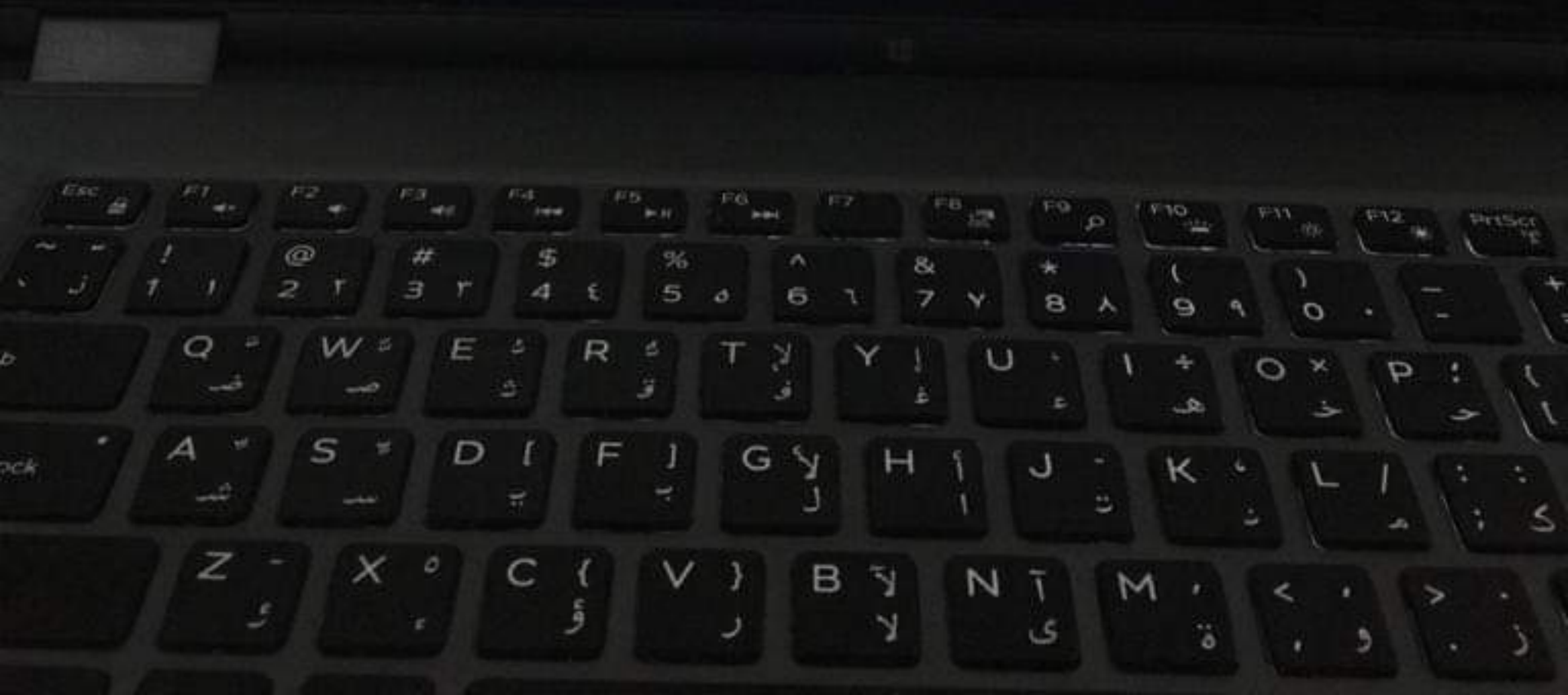
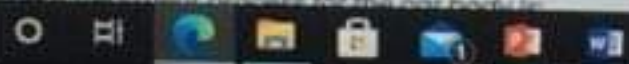
Select one:

- ☐ a. is radio active
- ☐ b. has impurity atoms
- ☐ c. is pure
- ☐ d. is magnetized

Question 5

The commonest heat treatment process for the castings is

Type here to search



Select one:

- ☐ a. A result of the perfection in the lattice
- ☒ b. A result of the distortion in the lattice
- ☐ c. A result of the formation of a Ms-like structure
- ☐ d. A result of Alpha phase formation

[Clear my choice](#)

The recommended heat treatment process for the car body is:

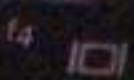
Select one:

- ☐ a. normalizing + hardening
- ☐ b. normalizing
- ☐ c. annealing
- ☒ d. Hardening

[Clear my choice](#)

s page

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14
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The main distinct welding zones are:

Select one:

- ☐ a. Weld metal, and Knife effect in Base metal
- ☐ b. HAZ and Knife effect in Base metal
- ☒ c. Weld metal, HAZ, and Base metal
- ☐ d. Weld metal, HAZ, and Knife effect in Base metal

[Clear my choice](#)

15
saved
out of

The hardenability is not affected by

Select one:

- ☐ a. quenching medium and method of
- ☒ b. air
- ☐ c. critical cooling rate
- ☐ d. chemical composition of steel

[Clear my choice](#)



Which one of the following is not equilibrium heat treatment

Select one:

- ☐ a. annealing
- ☐ b. precipitation
- ☒ c. Austenizing
- ☐ d. normalizing

[Clear my choice](#)

6

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Dendrite can be seen clearly in the microstructure of the castings if the alloy:

Select one:

- ☐ a. is magnetized
- ☐ b. is radio active
- ☒ c. has impurity atoms
- ☐ d. is pure

[Clear my choice](#)

7

aved

ut of

A method of getting a mixture of Pearlite (P), Bainite (B) & Martensite (M) in an eutectoid steel is:



Question 22

Not yet answered

Marked out of 2.00

Flag question

A method of getting a mixture of Pearlite (P), Bainite (B) & Martensite (M) in an eutectoid steel is:

Select one:

- ☒ a. Cooling to a temperature above the border line of P and B, crossing the transformation 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 transformation ends line, then quenching
- ☐ b. Cooling to a temperature above the border line of P and B, crossing the transformation ends line and soaking to a certain time, cooling it to below the border line, soaking to a certain, then quenching
- ☐ c. Cooling to a temperature below the border line of P and B, crossing the transformation starts line and soaking to a certain time, then quenching
- ☐ d. Cooling to a temperature below the border line of P and B, crossing the transformation starts line and soaking to a certain time, soaking to a certain time but not cross the transformation ends line, then quenching

Clear my choice

Time left 0:27:18

Question 23

Not yet answered

Marked out of 2.00

Flag question

The temperature of the formation of martensite in the CCT:

Select one:

- ☐ a. is more than that for TTT diagram
- ☐ b. is less than that for TTT diagram



Question 9

Not yet answered

Marked out of 2.00

Flag question

The cooling rate for the precipitation heat treatment process of Al-copper alloys is

Select one:

- ☐ a. moderate
- ☐ b. slow
- ☐ c. very fast
- ☒ d. no matter

Clear my choice

Question 10

Not yet answered

Marked out of 2.00

Flag question

The tensile strength (TS) of steel can be predicted for the steel with a composition till eutectoid composition by the following formula:

Select one:

- ☒ a. $TS = 700 \times \%carbon + 350$
- ☐ b. $TS = 750 \times \%carbon + 350$
- ☐ c. $TS = 750 \times \%carbon + 300$
- ☐ d. $TS = 700 \times \%carbon + 300$

Clear my choice

- ☐ b. Cooling to a temperature above the border line of P and B, crossing the transformation ends line and soaking to a certain time, cooling it to below the border line, soaking to a certain, then quenching
- ☐ c. Cooling to a temperature below the border line of P and B, crossing the transformation starts line and soaking to a certain time, then quenching
- ☐ d. Cooling to a temperature below the border line of P and B, crossing the transformation starts line and soaking to a certain time, soaking to a certain time but not cross the transformation ends line, then quenching

[Clear my choice](#)

Question 23

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Marked out of 2.00

Flag question

The temperature of the formation of martensite in the CCT

Select one:

- ☐ a. is more than that for TTT diagram
- ☐ b. is less than that for TTT diagram
- ☐ c. is shifted to the right
- ☒ d. is the same as for TTT diagram

[Clear my choice](#)

Question 24

Heat yet
unhatched

14.000 out of

No post heat treatment of the weld is recommended if the carbon equivalent (CE) is:

[Clear my choice](#)

Question 5

Not yet
answered

Marked out of
2.00

Flag
question

The slowest cooling rate is obtained when steel is quenched in

Select one:

- ☒ a. air
- ☐ b. fused salt
- ☐ c. brine
- ☐ d. mixture of oil and water

[Clear my choice](#)

Type here to search





Question 17

Not yet answered

Marked out of 2.00

Flag question

The recommended heat treatment process for the hacksaw is:

Select one:

- ☒ a. Hardening
- ☐ b. annealing
- ☐ c. Normalizing
- ☐ d. Normalizing+hardening

Clear my choice

Question 18

Not yet answered

Marked out of 2.00

Flag question

If the nose of the TTT diagram for an alloy is at the zero time line

Select one:

- ☐ a. it is difficult to harden it
- ☐ b. Special furnace is needed to harden it
- ☒ c. it is impossible to harden it
- ☐ d. it would be easy to harden it

Clear my choice





answered
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question

Select one:

- ☒ a. hardening
- ☐ b. normalizing + hardening
- ☐ c. Annealing
- ☐ d. normalizing

Clear my choice

Question 13

Not yet
answered
Marked out of
2.00
Flag
question

The body centered tetragonal crystal structure is:

Select one:

- ☒ a. when $a=b \neq c$ and has an atom in the center
- ☐ b. when $a=b=c$ and has an atom in the center and another on the surface
- ☐ c. when $a=b=c$ and has an atom in the center
- ☐ d. when $a=b=c$ and has an atom on the surface

Clear my choice

Question 14

Not yet
answered
Marked out of

Which one of the following is not correct

Type here to search



The Ms temperature on the TTT diagram is a function of carbon content as follows.

Select one:

- ☐ a. There is no change in Ms temperature
- ☐ b. There is a slight change in Ms temperature
- ☐ c. The higher the %C, the higher the Ms temperature
- ☒ d. The higher the %C, the lower the Ms temperature

[Clear my choice](#)

The overaging mechanism in Al-Cu alloys is.

- ☐ c. is magnetized
- ☐ d. is radio active

[Clear my choice](#)

Question 8

Not yet
answered

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1.00

Flag
Question

1. *The limitation of the phase diagram for heat treatment purposes is that*

Select one:

- ☐ a. it does not show the effect of cooling rate
- ☐ b. Austenite does not exist at room temperature
- ☐ c. it does not show the bainite
- ☐ d. it is used only for plain carbon steel

Question 9

Answer saved

Marked out of

The cooling rate for the precipitation heat treatment process of Al-copper alloys is.

Question 8

Answer saved

Marked out of

Flag

Question

Which one of the following is not equilibrium heat treatment

Select one:

- ☒ a. precipitation
- ☐ b. normalizing
- ☐ c. Austenizing
- ☐ d. annealing

[Clear my choice](#)

Question 9

Answer saved

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The cooling rate for the precipitation heat treatment process of Al-copper alloys is.

Select one:

METALLURGICAL PROCESSES

[Home](#)[My courses](#)[METALLURGICAL PROCESSES](#)[16 August - 22 August](#)[Final exam metallurgical processes-summer semester](#)

Question 11

Not yet answered

Marked out of 2.00

Flag question

The overaging mechanism in Al-Cu alloys is:

Select one:

- ☐ a. A result of the perfection in the lattice
- ☒ b. A result of the distortion in the lattice
- ☐ c. A result of Alpha phase formation
- ☐ d. A result of the formation of a Ms-like structure

[Clear my choice](#)

Quiz navigation

1	2	3	4
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17	18	19	20
25			

Finish attempt ...

Time left 0:34:42

Question 12

Answer saved

Marked out of 2.00

Flag question

The tensile strength (TS) of steel can be predicted for the steel with a composition till eutectoid composition by the following formula:

Select one:

- ☐ a. $TS = 750 \times \% \text{carbon} + 350$

Question 16

Answer saved

Marked out of 2.00

Flag question

The recommended heat treatment process for the Drive half-shaft for a small car is:

Select one:

- ☐ a. normalizing
- ☐ b. normalizing + hardening
- ☒ c. Annealing
- ☐ d. hardening

[Clear my choice](#)

Question 17

Answer saved

Marked out of 2.00

Flag question

The Ms temperature on the TTT diagram is a function of carbon content as follows:

Select one:

- ☐ a. There is no change in Ms temperature

the higher the Ms temperature

The fastest cooling rate is achieved when steel is quenched in

Select one:

- ☒ a. brine
- ☐ b. oil
- ☐ c. air
- ☐ d. water

[Clear my choice](#)

☐ d. moderate

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Which one of the following is not correct

Select one:

- ☒ a. Martensite has a BCC structure
- ☐ b. Austenite has FCC structure
- ☐ c. The martensite which is formed during quenching is too brittle
- ☐ d. Martensite is a solid solution of carbon in BCC iron

[Clear my choice](#)

ion 24

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Austenite is: