

## Unit 5 - Week 4

### Course outline

How to access the portal

Week 1

Week 2

Week 3

Week 4

- Lecture 14: Phase diagrams of binary eutectic two terminal solid solution
- Lecture 15: Phase diagrams of binary peritectic System-I
- Lecture 16 : Phase diagrams of binary peritectic System-II
- Lecture 17 : Phase diagrams of binary peritectic System with intermediate phases

○ Quiz : Week 4 Assignment 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

Week 13

Assignment Solutions

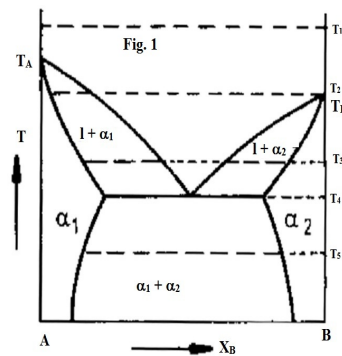
### Week 4 Assignment 4

The due date for submitting this assignment has passed.

**Due on 2016-02-16, 23:55 IST.**

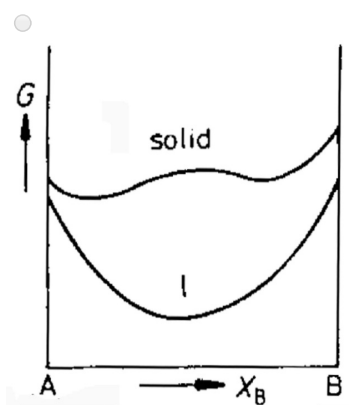
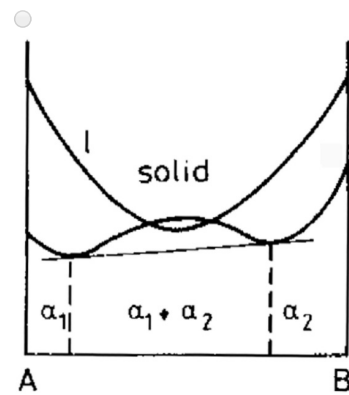
Submitted assignment

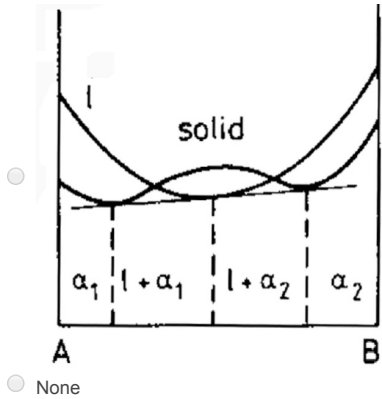
1)



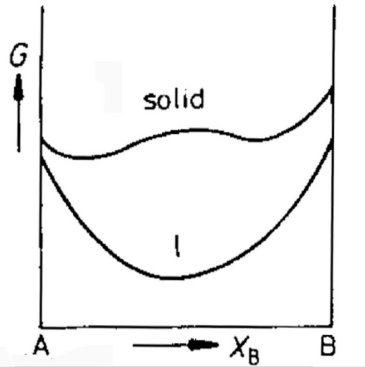
1 point

Consider Eutectic phase diagram Fig. 1  
Find out the isotherm at temperature  $T_1$



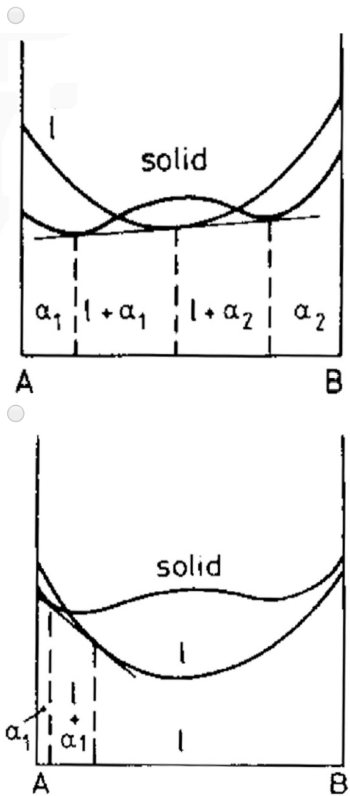


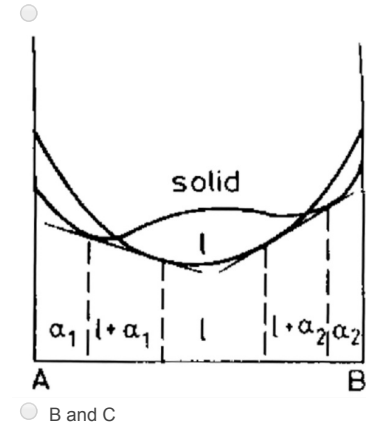
No, the answer is incorrect.  
Score: 0  
Accepted Answers:



2) Consider Fig 1 in question 1. Find out the isotherm corresponding temperature  $T_2$

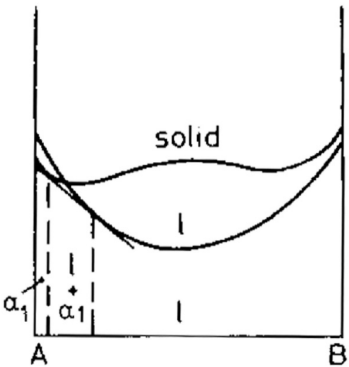
1 point





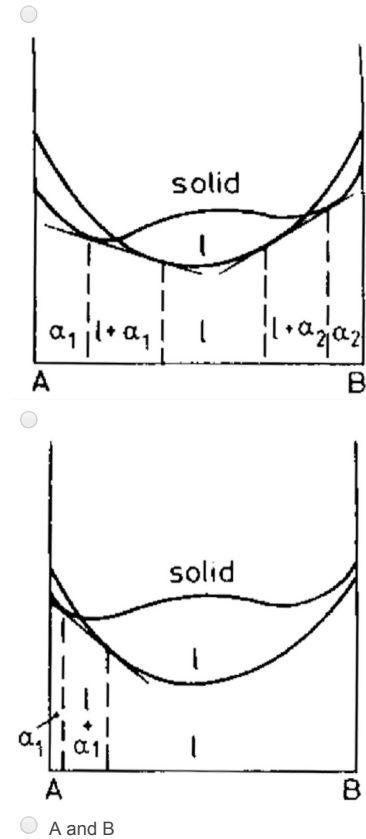
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Score: 0

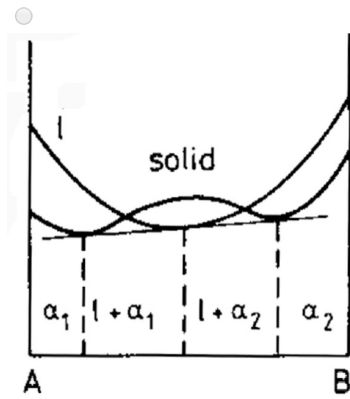
Accepted Answers:



3) Consider Fig 1 in question 1. Find out the isotherm corresponding temperature  $T_3$

1 point

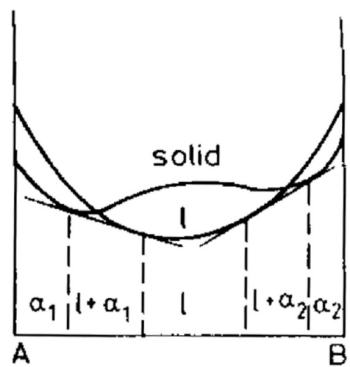




No, the answer is incorrect.

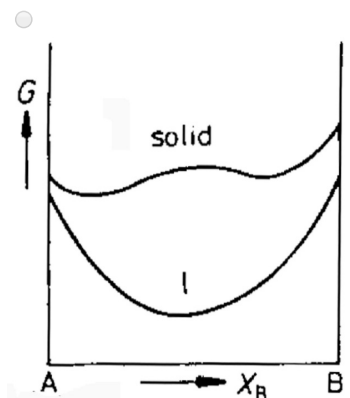
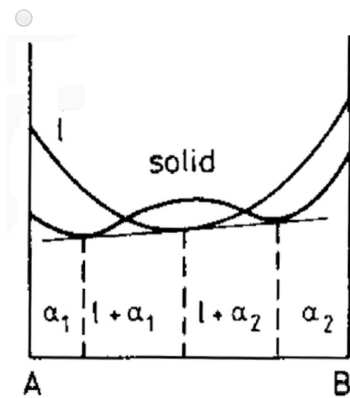
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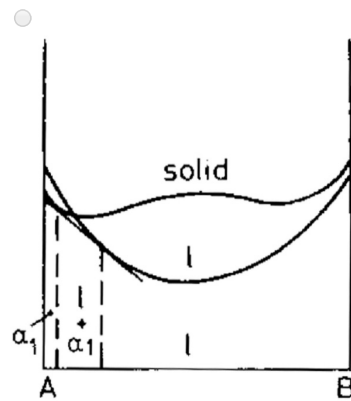
Accepted Answers:



4) Consider Fig. 1 in question 1. Find out the isotherm corresponding temperature  $T_4$

1 point



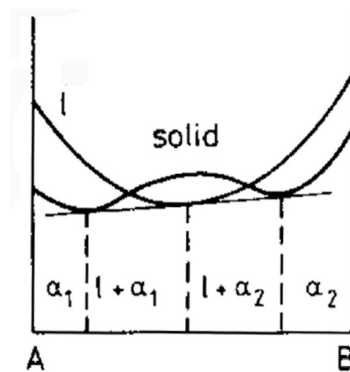


☐ none

No, the answer is incorrect.

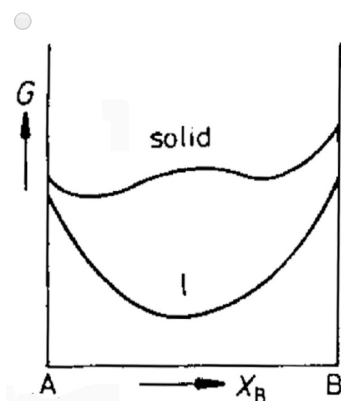
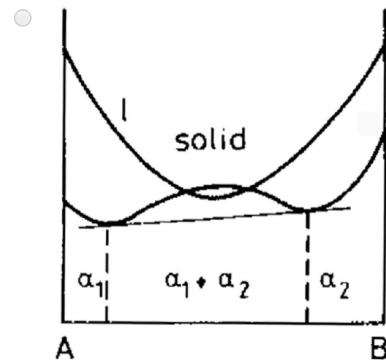
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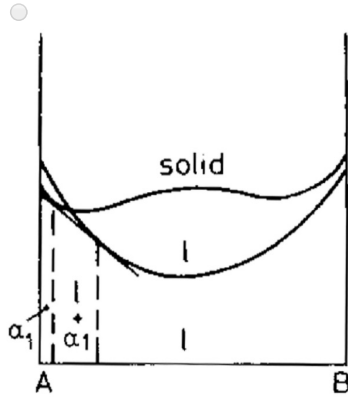
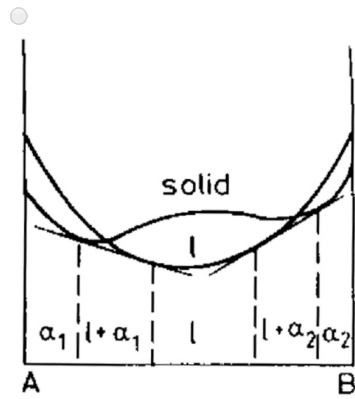
Accepted Answers:



5) Consider Fig. 1 in question 1. Find out the isotherm corresponding temperature  $T_5$

1 point

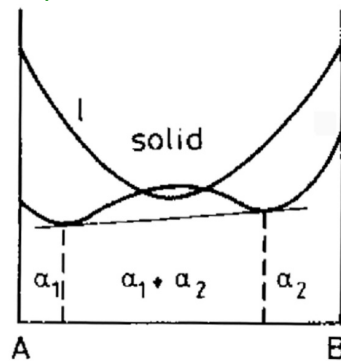




No, the answer is incorrect.

Score: 0

Accepted Answers:



6) On heating, one solid phase results in another solid phase plus on liquid phase during ----- reaction.

1 point

- ☐ Eutectic
- ☐ Syntectic
- ☐ Peritectic
- ☐ Monotectic

No, the answer is incorrect.

Score: 0

Accepted Answers:

Peritectic

7) On cooling, one solid phase with one liquid phase results in another solid phase during -----reaction.

1 point

- ☐ Eutectic
- ☐ Peritectic
- ☐ Monotectic
- ☐ Syntectic

No, the answer is incorrect.

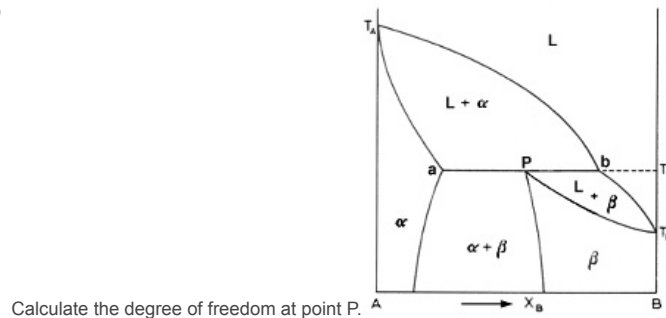
Score: 0

Accepted Answers:

Peritectic

8)

1 point



Calculate the degree of freedom at point P.

- ☐ 3  
☐ 2  
☐ 1  
☐ 0

No, the answer is incorrect.

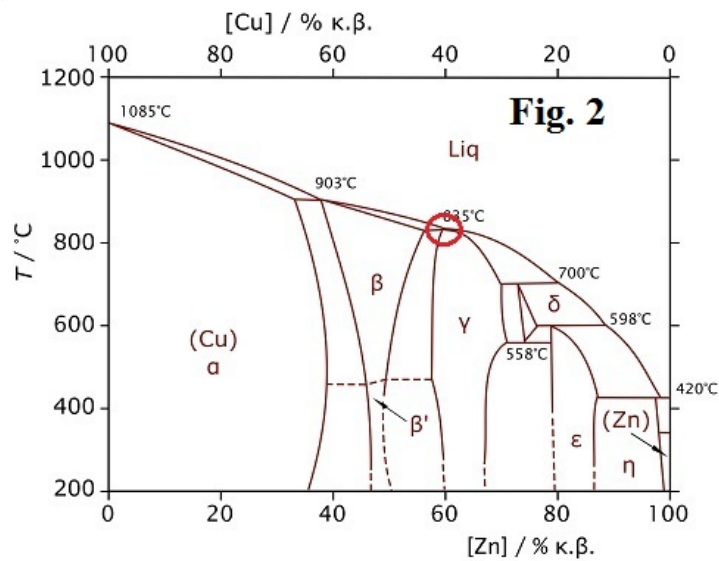
Score: 0

Accepted Answers:

0

9) Calculate the number of peritectic reaction in Cu-Zn phase diagram in Fig. 2

1 point



- ☐ 3  
☐ 1  
☐ 4  
☐ 2

No, the answer is incorrect.

Score: 0

Accepted Answers:

4

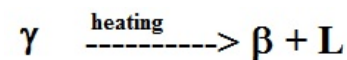
10) Find out the type of reaction at circled point in Fig. 2 question 9

1 point

- ☐ peritectic reaction  
☐



- ☐



- ☐ All

No, the answer is incorrect.

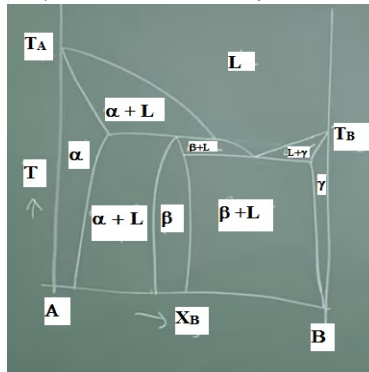
Score: 0

Accepted Answers:

All

11) The statement is true for phase beta in following phase diagram.

1 point



- ☐ Composition lies in the intermediate region of two terminal solid solutions
- ☐ Stable for small compositional range
- ☐ Crystal structure is distinctly different from the terminal solid solution
- ☐ All above

No, the answer is incorrect.

Score: 0

Accepted Answers:

All above

12) Pick the odd one in the following:

1 point

- ☐ Terminal solid solution
- ☐ Compound
- ☐ Intermediate solid solution
- ☐ Isomorphous alloy

No, the answer is incorrect.

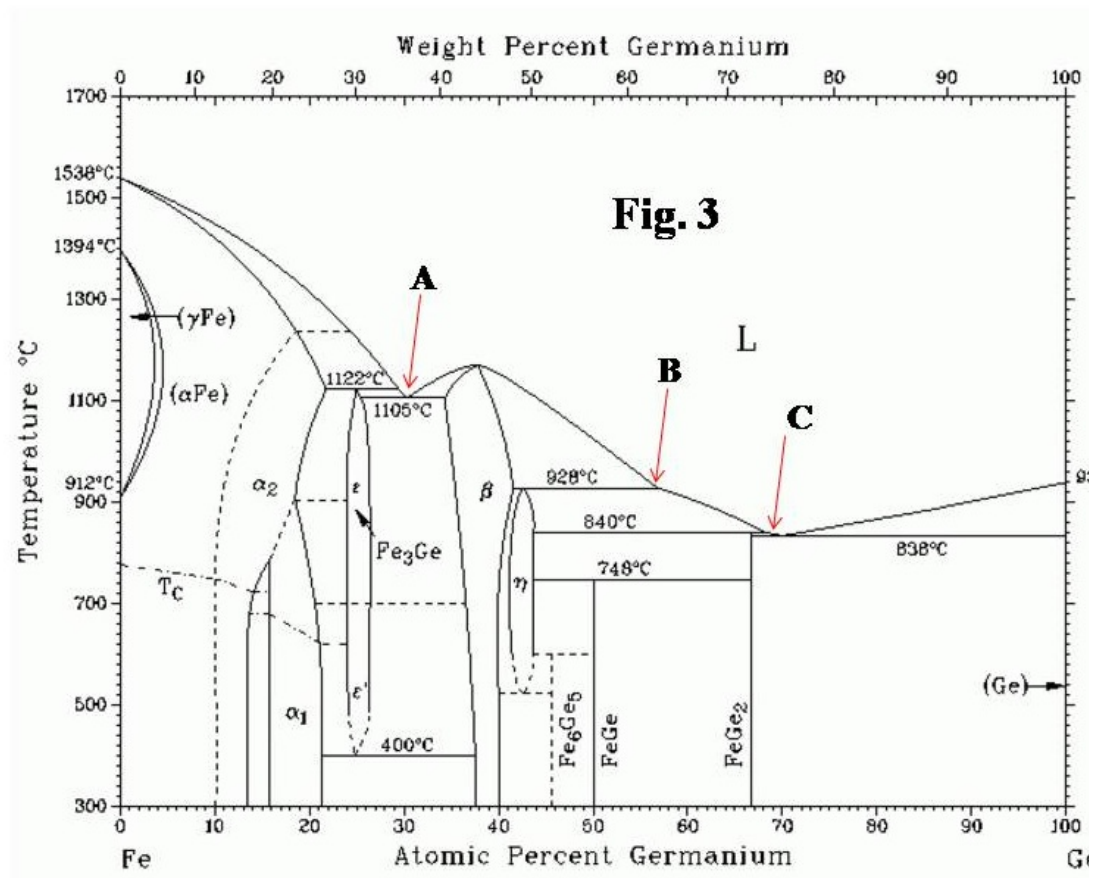
Score: 0

Accepted Answers:

Isomorphous alloy

13) Find out the eutectic point in following phase diagram.

1 point



- ☐ Point A
- ☐ Point B
- ☐ Point C
- ☐ All above



No, the answer is incorrect.

Score: 0

Accepted Answers:

Point A

14)What is the Eutectic temperature?

1 point

Statement-"The eutectic temperature is the lowest temperature at which you can have a liquid phase for a binary isomorphous alloy system"

- ☐ statement partially true
- ☐ statement true
- ☐ cannot say
- ☐ wrong

No, the answer is incorrect.

Score: 0

Accepted Answers:

statement true

15)How do you determine the eutectic composition?

1 point

Statement" Locate the intersection of the liquidus line and line of eutectic temperature on the eutectic phase diagram.

This is the eutectic point. The composition at this point is the eutectic composition"

- ☐ statement true
- ☐ statement untrue
- ☐ partially true
- ☐ all above

No, the answer is incorrect.

Score: 0

Accepted Answers:

statement true

16)An alloy is a?

1 point

- ☐ Pure metal
- ☐ Mixture of metals in any proportion
- ☐ Mixture of metals in fixed proportion
- ☐ Mixture of two non metals

No, the answer is incorrect.

Score: 0

Accepted Answers:

Mixture of metals in fixed proportion

17)Brass is an alloy of?

1 point

- ☐ Copper and tin
- ☐ Copper and nickel
- ☐ Copper and Aluminium
- ☐ Copper and zinc

No, the answer is incorrect.

Score: 0

Accepted Answers:

Copper and zinc

18)An alloy can be one of the following type

1 point

- ☐ Homogenous
- ☐ Heterogeneous
- ☐ Intermetallic
- ☐ All of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

All of the above

19)The first alloy made by humans was

1 point

- ☐ Mild steel
- ☐ Brass
- ☐ Bronze
- ☐ Steel

No, the answer is incorrect.

Score: 0

Accepted Answers:

Bronze

20) Bronze is an alloy of?

1 point

- ☐ Copper and Nickel
- ☐ Copper and iron
- ☐ Copper and Tin
- ☐ Copper and Aluminium

No, the answer is incorrect.

Score: 0

Accepted Answers:

Copper and Tin

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