Unit 8 - week 7

Assignment-7

The due date for submitting this assignment has passed. Due on 2017-09-10, 23:59 IST.
As per our records you have not submitted this assignment.

1) Driving force for agglomeration is_____ *1 point*

- Reduction in surface energy
- Reduction in volume energy
- Formation of atomic bonds
- Reduction in chemical energy

No, the answer is incorrect.
Score: 0

Accepted Answers:
Reduction in surface energy

2) Which of the following structures possess highest packing fraction and highest coordination number? *1 point*

- Simple cubic packing
- Face centered cubic packing
- Loose random packing
- Dense random packing

No, the answer is incorrect.
Score: 0

Accepted Answers:
Face centered cubic packing

3) Which one of the following is true regarding oxide reduction method of fabrication of iron powder? *1 point*

- Milling of the oxide is not necessary
- Low temperature is advantageous as it ensures small time for completion of oxide reduction
- Extent of the reaction depends upon ratio of partial pressure of water-vapor to hydrogen
- Reaction does not depend upon solid state diffusion

No, the answer is incorrect.
Score: 0

Accepted Answers:
Extent of the reaction depends upon ratio of partial pressure of water-vapor to hydrogen

4) Which one of the following is true regarding Electrolytic technique for powder fabrication? *1 point*

- Very high purity particulates can be obtained
- Alloys and compounds can be easily manufactured using this technique
- Spherical particles are obtained in this technique
- Particles obtained are of uniform shape and size

No, the answer is incorrect.
Score: 0

Accepted Answers:
Very high purity particulates can be obtained

5) How can you ball mill a material if it is ductile? ***1 point***

- By using hard milling media
- By using large sized milling media
- By hydrogenation of the powder particles to make it brittle
- By increasing the speed of rotation of the jar which contains the powder particle and milling media

No, the answer is incorrect.
Score: 0

Accepted Answers:
By hydrogenation of the powder particles to make it brittle

6) Which of the following is true regarding the particle size of the particle during ball-milling? ***1 point***

- If one mills for infinitely long time, particle size can be reduced infinitesimally smaller
- The impact stress required for fracture remains constant with decreasing particle size
- If the speed of rotation is increased, the particle size can be reduced further
- There is a smallest particle size beyond which particles cannot be broken down further, for a given system of ball mill

No, the answer is incorrect.
Score: 0

Accepted Answers:
There is a smallest particle size beyond which particles cannot be broken down further, for a given system of ball mill

7) Silicon carbide powder is produced by_____ ***1 point***

- Bayer's technique
- Acheson Process
- Spray Drying
- Freeze Drying

No, the answer is incorrect.
Score: 0

Accepted Answers:
Acheson Process

8) Q 8 and Q9 are based on this: ***1 point***

One hundred grams of iron oxide (FeO) is reacted with 1000 cm^3 of pure hydrogen (STP) in a closed system at one atmosphere using a temperature of 400 °C for an extended time. What is the weight of the pure Fe that would be formed? Assume that FeO is stable at 400 °C (w_{H_2} = 2 gm/mole; w_{Fe} = 56 gm/mole)

Calculate the number of moles of H_2 remaining after reaction and number of moles of H_2O formed after reaction.

- $n(H_2) = 0.1$; $n(H_2O) = 0.1$
- $n(H_2) = 0.1$; $n(H_2O) = 0.0041$
- $n(H_2) = 0.0405$; $n(H_2O) = 0.1$
- $n(H_2) = 0.0405$; $n(H_2O) = 0.0041$

No, the answer is incorrect.
Score: 0

Accepted Answers:

$n(H_2) = 0.0405$; $n(H_2O) = 0.0041$

9) What is the weight of pure Fe that would be formed from this reaction? ***1 point***

- 22.9 gm Fe
- 2.29 gm Fe
- 0.229 gm Fe
- 0.023 gm Fe

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.229 gm Fe

10) During Gas atomization, which of the following is NOT true? ***1 po***

- The particle shape is usually spherical
- Sometime satellite particles are formed due to high superheat of the melt
- Higher the energy input, smaller are the particle size
- Higher the operating temperature, smaller are the particle size

No, the answer is incorrect.
Score: 0

Accepted Answers:
Sometime satellite particles are formed due to high superheat of the melt

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