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Courses » Fundamentals of Material Processing - I

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Unit 7 - week 6

Course outline

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○ Lecture 26 - Introduction to Powder Processing

○ Lecture 27 - Introduction to Powder Processing continued...

○ Lecture 28 - Powder characterization

○ Lecture 29 - Powder Characterization Techniques

○ Lecture 30 - Powder Characterization using Surface Area

○ Quiz : Assignment-6

○ Assignment 6 Solution

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Assignment-6

The due date for submitting this assignment has passed. Due on 2017-09-05, 23:59 IST.
As per our records you have not submitted this assignment.

1) Sprue is tapered in shape based on these principles: *1 point*
   A. Bernoulli's theorem
   B. Newton's Law
   C. Continuity Law
   D. Poisson's Theorem

   ○ A and C
   ○ B and D
   ○ A and D
   ○ A and B

   No, the answer is incorrect.
   Score: 0

   Accepted Answers:
   A and C

2) The various processes carried out in powder metallurgy are as follows   *1 point*
   i. preparation of powder
   ii. Sintering
   iii. Blending of powder
   iv. Compacting of powder
   The correct sequence is

   ○ i, ii, iii, iv
   ○ i, iii, iv, ii
   ○ ii, i, iii, iv
   ○ iii, i, ii, iv

   No, the answer is incorrect.
   Score: 0

   Accepted Answers:
   i, iii, iv, ii

3) Which of the following is (are) true regarding powder metallurgy?   *1 point*
   A. Zero or minimal scrap
   B. No secondary operation
   C. Poor surface finish
   D. High dimensional accuracy of components manufactured

   ○ Only A, B and C are true
   ○ Only A and B are true
   ○ All A, B, C and D are true
   ○ Only A, B and D are true

No, the answer is incorrect.
Score: 0

Accepted Answers:
Only A, B and D are true

4) For powder particles having 10 μm size and density 2000 kg/m^3, how many number of particles will be there is one kg of powder   *1 point*

- ○ 10^{21}
- ○ 10^{12}
- ○ 10^{14}
- ○ 10^{10}

No, the answer is incorrect.
Score: 0

Accepted Answers:
10^{12}

5) For powder having equivalent spherical diameter (D) obtained using SEM micrographs, which of the following is true: *1 point*

- ○ $D=(6A/\pi)^{1/2}$
- ○ $D=(6V/\pi)^{1/3}$
- ○ $D=(4A/\pi)^{1/2}$
- ○ $D=(S/\pi)^{1/2}$

No, the answer is incorrect.
Score: 0

Accepted Answers:
$D=(4A/\pi)^{1/2}$

6) Which of the following are true when the powder particles are distributed in some random distribution   *1 point*

     A. Chebyshev inequality can be applied to find fraction of particles within given standard deviation
     B. Any fraction of particles may lie within -1σ to +1σ
     C. 75% of particles will lie within -2σ to +2σ

- ○ Only A and C are true
- ○ All A, B and C are true
- ○ Only C is true
- ○ Only B is true

No, the answer is incorrect.
Score: 0

Accepted Answers:
All A, B and C are true

7) Usually powder particles show this kind of distribution   *1 point*

- ○ Poisson distribution
- ○ Normal distribution
- ○ Random distribution
- ○ Log-Normal distribution

No, the answer is incorrect.
Score: 0

Accepted Answers:
Log-Normal distribution

8) If sieve used for powder characterization is of 200 mesh size with wires being 52 μm in diameter, the particles which are able to cross through this sieve will be of size smaller than____   *1 point*

- ○ 200 μm

○ 127 µm
○ 75 µm
○ 100 µm

No, the answer is incorrect.
Score: 0

Accepted Answers:
75 µm

9) Which two techniques utilize surface area for particle size characterization?   *1 p*
    A. Sedimentation
    B. Gas adsorption
    C. Gas permeability

○ Only A and B
○ Only B and C
○ Only A and C
○ Neither of A, B or C

No, the answer is incorrect.
Score: 0

Accepted Answers:
Only B and C

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