X

Courses » Fundamentals of Material Processing - I

                                    Announcements   **Course**   Ask a Question   Progress

Unit 9 - week 8

Course outline

How to access the portal

Week 1

Week 2

week 3

week 4

week 5

week 6

week 7

week 8

- ○ Lecture 36 - Powder Consolidation continued...

- ○ Lecture 37 - Particle Packing

- ○ Lecture 38 - Powder Compaction

- ○ Lecture 39 - Powder Compaction continued...

- ○ Lecture 40 - Sintering Theory

- ○ Quiz : Assignment-8

- ○ Assignment 8 Solution

Assignment-8

**The due date for submitting this assignment has passed. Due on 2017-09-17, 23:59 IST.
As per our records you have not submitted this assignment.**

1) Which of the following is/ are true regarding average Nc (average no. of particle contacts per   *1 point*
unit volume)?
    A. Nc = CN/2 * Np
    B. Nc is dependent upon packing fraction (PF) of the material
    C. It is constant for a given material
    D. Higher the value, faster should be the rate of sintering

   ○ Only A, B and C are true

   ○ All A, B, C and D are true

   ○ Only 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

2) Packing fraction of spherical particles of a given size, can be increased by_____   *1 point*

   ○ Having a continuous distribution of particle size, instead of fixed size

   ○ Mixing particles of different sizes

   ○ Reducing the particle size

   ○ increasing the particle size

**No, the answer is incorrect.
Score: 0**

Accepted Answers:
Mixing particles of different sizes

3) Q. 3-5 are based on this problem   *1 point*
        Small and large particles (D_{large}/ D_{small} >10) are filled together in a jar and their effective packing
fraction is plotted as a function of volume fraction of fine in coarse. It is known that coarse particles pack
in FCC packing and fine particles also pack in FCC packing.

        What is the value of 'A', effective PF at $V_f/(V_c+V_f)$ = 0?

   ○ 0.68

   ○ 0.1924

   ○ 0.932

   ○ 0.74

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.74

4) What is the value of 'B', highest PF for the system?　　　　　*1 point*

○　0.68

○　0.1924

○　0.932

○　0.74

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.932

5) What is the value of 'C', $V_f/(V_c+V_f)$ where maximum PF is achieved?　　　*1 po*

○　0.68

○　0.1924

○　0.932

○　0.74

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.1924

6) Die-wall friction analysis shows that_____　　　　　　　*1 point*
　　A. Actual pressure on the compact decreases with increasing thickness
　　B. Actual pressure on the compact increases with increasing diameter
　　C. Peak pressure decreases exponentially with diameter
　　D. Larger the value of H/D, larger is the transmitted pressure

○　Only A and D are true

○　All A, B, C and D are true

○　Only B and D are true

○　Only A and C are true

No, the answer is incorrect.
Score: 0

Accepted Answers:
Only A and C are true

7) When two equi-sized small crystalline particles are sintered?　　　*1 point*

○　One single spherical particle is formed

○　One single particle with a groove is formed

○　Two particles remain separate at all times

○　One particle is consumed by the other by Oswald ripening

No, the answer is incorrect.
Score: 0

Accepted Answers:
One single particle with a groove is formed

8) Various mass transport mechanism during sintering are_____　　*1 point*
　　A. Evaporation and condensation
　　B. Dissolution and Precipitation
　　C. Plastic Flow
　　D. Diffusion

○　All A, B, C and D are correct

○　Only A and B are correct

○ Only A and D are correct

○ Only A, C and D are correct

No, the answer is incorrect.
Score: 0

Accepted Answers:
Only A, C and D are correct

9) Match the stages with the characteristics: *1 point*

○ (p) → 2; (q) → 1; (r) → 3
○ (p) → 1; (q) → 2; (r) → 3
○ (p) → 3; (q) → 2; (r) → 1
○ (p) → 3; (q) → 1; (r) → 2

No, the answer is incorrect.
Score: 0

Accepted Answers:
(p) → 3; (q) → 1; (r) → 2

10) Which of the following are true regarding final stage of sintering?   *1 point*
    A. Characterized by tetrakaidekahedron grains
    B. Pores are closed and isolated
    C. After sintering for very long time, pores can be eliminated
    D. Pores can grow by Ostwald ripening

○ Only A and B are true

○ Only B and D 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

Previous Page   End

A project of

NPTEL National Programme on
Technology Enhanced Learning

In association with

NASSCOM®

Funded by

Government of India
Ministry of Human Resource Development

Powered by

Google