Unit 11 - Week 9

Assignment 9

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-10-02, 23:59 IST.

1) For fracture in a viscoelastic material, ___________ of force application is necessary. *1 point*

a. High rate
b. Low rate
c. Constant rate
d. None of the above

a.
b.
c.
d.

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

2) According to Rittinger (1867), energy required for particle size reduction is *1 point*

a. Inversely proportional to the area of new surface created
b. Directly proportional to the area of new surface created
c. Independent of the area of new surface created
d. Dependent on the size reduction ratio

a.
b.
c.
d.

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

3) To calculate the energy required for coarse crushing and crushing of large particles size, which of the following is mostly appropriate? *1 point*

a. Bond's formula
b. Rittinger's proposal
c. Kick's law
d. None of the above

a.
b.
c.
d.

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

4) Which of the following is a criterion for choice of comminution equipment? *1 point*

a. Stressing mechanism
b. Feed and product size
c. Mode of operation
d. All of the above

a.
b.
c.
d.

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

5) To calculate the energy requirement for particle size reduction, Bond's law is suitable for ___________kind of particles. *1 point*

a. Large particle size
b. Very small particle size
c. Intermediate particle size
d. All of the above

a.
b.
c.
d.

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

6) The efficiency of ball mill ____________ with hold-up in the mill. *1 point*

a. Increases
b. Decreases
c. Doesn't change
d. None of the above

a.
b.
c.
d.

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

7) The optimum diameter of ball used in ball mill is approximately proportional to the ___________ of the size of the feed. *1 point*

a. Square
b. Square root
c. Root cube
d. None of the above

a.
b.
c.
d.

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

8) Which of the following factors affects the efficiency of ball mill. *1 point*

a. Slope of the mill
b. Level of material in the mill
c. Speed of rotation of the mill
d. All of the above

a.
b.
c.
d.

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

9) In a ball mill, the diameter of ball varies in the range of _______________. *1 point*

a. 12 mm – 125 mm
b. 0.12 mm – 0.125 mm
c. 12 cm – 125 cm
d. 1.2 mm – 12 mm

a.
b.
c.
d.

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

10) Which of the following is not true for ball mill? *1 point*

a. It can be operated with cheap grinding medium
b. It has low cost of installation and power
c. It is suitable for handling explosive and hazardous materials
d. It can be operated only in continuous mode

a.
b.
c.
d.

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

11) Critical rotational speed (N_c) of a ball mill can be expressed as ____ , where r = radius of the mill - radius of the particle: *1 point*

a. $N_c = \frac{1}{2\pi}\sqrt{\frac{g}{r^2}}$
b. $N_c = \frac{1}{\pi}\sqrt{\frac{2g}{r}}$
c. $N_c = \frac{1}{2\pi}\sqrt{\frac{g}{r}}$
d. $N_c = \frac{1}{2\pi}\sqrt{\frac{r}{g}}$

a.
b.
c.
d.

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

12) In a pin mill, which of the following methods of force is usually applied? *1 point*

a. Impact + attrition
b. Only Impact force
c. Only attrition
d. Impact + attrition + crushing

a.
b.
c.
d.

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

13) In a ball mill, which of the following methods of force is usually applied? *1 point*

a. Crushing + Impact
b. Crushing + impact + attrition
c. Crushing + attrition
d. Impact + attrition

a.
b.
c.
d.

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

14) According to Kick's law, the specific energy requirement is dependent on: *1 point*

a. the surface area creation
b. the actual particle size
c. the size reduction ratio
d. None of the above

a.
b.
c.
d.

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

15) A material consisting originally of 35 mm particles is crushed to an average size of 13 mm and requires 30 kJ/kg for this size reduction. Determine the energy required to crush the material from 35 mm to 7.5 mm using Rittinger's law. *2 points*

a. 45 kJ/kg
b. 55 kJ/kg
c. 65 kJ/kg
d. 75 kJ/kg

a.
b.
c.
d.

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

16) A material consisting originally of 35 mm particles is crushed to an average size of 13 mm and requires 30 kJ/kg for this size reduction. Determine the energy required to crush the material from 35 mm to 7.5 mm using Kick's law. *2 points*

a. 46.68 kJ/kg
b. 56.68 kJ/kg
c. 66.68 kJ/kg
d. 76.68 kJ/kg

a.
b.
c.
d.

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

17) A material consisting originally of 35 mm particles is crushed to an average size of 13 mm and requires 30 kJ/kg for this size reduction. Determine the energy required to crush the material from 35 mm to 7.5 mm using Bond's law. *2 points*

a. 44.48 kJ/kg
b. 54.48 kJ/kg
c. 64.48 kJ/kg
d. 74.48 kJ/kg

a.
b.
c.
d.

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