Assignment 8

The due date for submitting this assignment has passed.

Due on 2019-08-25, 23:58 IST.

1. Which of the following laws is most commonly applicable to fine grinding of material?
   - a) Stokes’ law
   - b) Higginson’s law
   - c) Newton’s law
   - d) None of the above

2. Cruising efficiency is the ratio of the __________
   - a) Surface area created by cruising to the energy absorbed by the solid
   - b) Energy absorbed by solid to the energy input to the mixer
   - c) Surface area of product to the surface area of feed
   - d) None of these

3. According to Stokes’ law, energy required for grinding a large size feed is directly proportional to
   - a) cube root of surface to volume ratio
   - b) square of surface to volume ratio
   - c) cube root of surface to volume ratio
   - d) square root of surface to volume ratio

4. Stated reduction by-sieved roll crusher is by
   - a) Compression
   - b) Shear
   - c) Impact
   - d) None of the above

5. “What will be the spherality of cube with side ‘x’?”
   - a) 0.650
   - b) 0.777
   - c) 0.558
   - d) 0.660

6. Calculate the square mean diameter of a rectangular cube with dimension 3mm x 7mm x 4mm.

7. Sugar crystals were ground from an average diameter of 20 mm to powder with an average diameter of 0.5 mm. The net power consumption was 0.5 kW. What is the feed rate in kg/hour. Consider the drum to be the equipment for grinding having speed equal to 0.2 m/s using Stroh’s law.
   - a) 0.285 kW
   - b) 0.55 kW
   - c) 6.25 kW
   - d) 6.25 kW

8. Calculate the energy requirement using Bond’s law for above problem.
   - a) 0.2 kW
   - b) 0.4 kW
   - c) 0.7 kW
   - d) 0.6 kW

9. Three consecutive slices 8 mm retain 10%, 20%, 10% & 20% respectively, the friezone modulus of ground material is ________
   - a) 1.2
   - b) 0.7
   - c) 0.2
   - d) 0.9

10. Critical speed of a ball mill of 1.2 m diameter filled with 30% ball is
    - a) 20 rpm
    - b) 40 rpm
    - c) 60 rpm
    - d) 0 rpm

11. A close packed stack of a tail ending of 1.0 mm diameter fitted with 0.04 tail is
    - a) 0.98
    - b) 0.45
    - c) 0.19
    - d) 0.98

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