

Metallurgical Kinetics and Energy Questions and Answers Pdf

1. From among the following, choose one which is not an exothermic process.

- a. methanol synthesis
- b. catalytic cracking
- c. Ammonia synthesis
- d. Oxidation of sulphur

Ans: B

2. With an increase in pressure in gaseous chemical reactions, the fractional conversion _____ when the number of moles decreases.

- a. Increases
- b.. Decreases
- c. Remains unaffected
- d. Unpredictable from the data

Ans: A

3. The heat of reaction

- a. Depends on the reaction
- b. Depends on the mechanism of reaction only
- c. Depends on both the pressure and mechanism of reaction
- d. Is independent of the mechanism of reaction

Ans: D

4. A catalyst promoter

- a. improves the activity of a catalyst
- b. acts as a catalyst support
- c. itself has very high activity
- d. all a, b and c

Ans: A

5. The rate of reaction does not decrease appreciably as the reaction proceeds, in case of an _____ reaction.

- a. autocatalytic
- b. exothermic
- c. endothermic
- d. autothermal

Ans: D

6. The excess of energy of the reactants required to dissociate into products is known as the _____ energy.

- a. thermal
- b. activation
- c. threshold
- d. binding

Ans : B

7. With increase in initial concentration, the fractional conversion of a first order reaction in a given time

- a. Increases
- b. Decreases
- c. Remains constant
- d, Unpredictable

Ans: C

8. The reactions with low activation energy are

- a. Always spontaneous
- b. Slow
- c. Fast
- d. Non spontaneous

Ans: C

9. The reaction rate almost gets doubled for 10°C rise in temperature. This is due to the fact that the

- a. increased temperature reduces the activation energy
- b. fraction of molecules having threshold energy increases
- c. collision frequency increases
- d. value of threshold energy decreases

Ans: B

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