



# CHEMISTRY

## BOOKS - ARIHANT PUBLICATION

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## CATALYSIS

**Exam Booster For Cracking Exam**

1. Substances which alter the speed of a chemical reaction without themselves

undergoing a permanent change are known as

A. promoters

B. catalysts

C. inhibitors

D. alums

**Answer: B**



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2. During hydrogenation of oils which of the following catalysts is commonly used?

A. Palladium metal

B. Nickel

C. Iron

D. Vanadium pentoxide

**Answer: B**



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3. A catalyst is a substance which :

A. alter the equilibrium in a reaction

B. does not participate in the reaction but speeds it up

C. participates in the reaction and provides an easier pathway for the same

D. it is always in the same phase as the reactants

**Answer: B**



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4. A catalyst is used in a reaction to

A. change the nature of reaction products

B. increase the reaction yield

C. decrease the reaction yield

D. decrease the time required for reaction

**Answer: D**



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5. Iron is used as a catalyst in the manufacture of ammonia. It is an example of

A. heterogeneous catalysis

B. homogeneous catalysis

C. autocatalysis

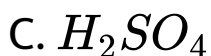
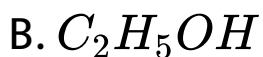
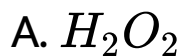
D. induced catalysis

**Answer: A**



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6. Which one of the following substances retards oxidation of chloroform?



D. Glycerol

**Answer: B**



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7. In which of these processes is platinum used as a catalyst?

- A. Oxidation of ammonia to form nitric acid
- B. Hardening of oil
- C. Production of synthetic rubber
- D. Synthesis of methanol

**Answer: A**



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## 8. The inhibitors

- A. stop a chemical reaction at once
- B. retard the rate of a chemical reaction
- C. do not allow the reaction to start
- D. are reducing agents

**Answer: B**



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9. Which one of the following substances acts as an anticatalyst to finely divided iron in Haber's process?

A.  $CO_2$

B. NO

C.  $H_2$

D.  $CO$

**Answer: D**



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**10.** A catalytic process in which the catalyst and the reactants are a part of the same phase is known as

A. heterogeneous catalysis

B. autocatalysis

C. enzyme catalysis

D. homogeneous catalysis

**Answer: D**



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11. A biological catalyst is

A. an amino acid

B. an enzyme

C. a carbohydrate

D. the  $N_2$  molecule

**Answer: B**



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12. Choose the correct statement from the following

A. The addition of catalyst changes equilibrium constant

B. A catalyst speeds up forward reaction and slows the backward reaction

C. The composition of equilibrium mixture is not changed by a catalyst

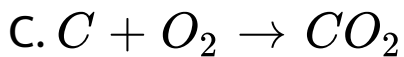
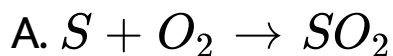
D. A catalyst is active only in solution

**Answer: C**



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**13. Which requires catalyst?**



D. All of these

**Answer: B**



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14. Protons accelerate the hydrolysis of esters, this is an example of

- A. a heterogeneous catalysis
- B. an acid-base catalysis
- C. a promoter
- D. a negative catalysis

**Answer: B**



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15. The enzyme which can catalyse the conversion of glucose to ethanol is

A. zymase

B. invertase

C. maltase

D. diastase

**Answer: A**



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16. An example of an autocatalytic reaction is

A. the decomposition of nitroglycerine

B. thermal decomposition of

$KClO_3 + MnO_2$  mixture

C. break down of  ${}^6_6C^{12}$

D. hydrogenation of vegetable oil using

nickel catalyst

**Answer: A**



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17. The effect of a catalyst in chemical reaction is to change the

- A. activation energy
- B. equilibrium concentration
- C. heat of reaction
- D. final products

**Answer: A**



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**18.** Hydrolysis of sugar to glucose and fructose is catalysed by

A. lactic bacilli

B. zymase

C. diastase

D. Invertase

**Answer: D**



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19. The process which is catalysed by one of the products is called

- A. auto catalysis
- B. acid-base catalysis
- C. negative catalysis
- D. None of these

**Answer: A**



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20. Which of the following changes occurs in the presence of light?

A. Addition of bromine with ethylene

B. Decomposition of  $AgNO_3$

C. Haber's process for the manufacture of  $NH_3$

D. Neutralisation of HCl and NaOH

**Answer: B**



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21. A photochemical reaction is

- A. catalysed by light
- B. Initiated by light
- C. accompanied with emission of light
- D. accompanied with absorption of light

**Answer: B**



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22. Catalyst poisons act by

A. chemically combining with the catalyst

B. getting absorbed on the active centres  
of the catalyst surface

C. chemical combination with anyone of  
the reactants

D. co-agulating the catalyst

**Answer: B**



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**23.** The substance which retards the rate of a reaction is called

- A. autocatalyst
- B. negative catalyst
- C. positive catalyst
- D. catalytic poison

**Answer: B**



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24. In the presence of dil. 2,4 and oxalic acid react first slowly, but after sometime the rate of reaction increases. It is an example of

A. Induced catalysis

B. autocatalysis

C. promoter

D. negative catalysis

**Answer: B**



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**25.** The efficiency of an enzyme in catalysing a reaction is due to its capacity

A. to form a strong enzyme substrate complex

B. to decrease the bond energies in the substrate molecule

C. to change the shape of the substrate molecule

D. to lower the activation energy of the  
reaction

**Answer: D**



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