# CHEMISTRY


# 2025 JAMB

# FREE LIKELY Questions and Answers



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2020. Which of this gas turns lime water milky

A ○ CO
B ◉ CO2
C ○ SO4
D ○ H2S

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2019. Another name for grignard's is

A ◉ Organomagnesium compound
B ○ Carbon
C ○ Aluminum(2)halide
D ○ Vicinaldihalide

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2015. The purest form of sillicon is

A ◉ Quartz
B ○ glass
C ○ Carbon
D ○ Half

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2022. All transition metals are D-Block element but not all D-Block element are transition metals.

A ◉ TRUE
B ○ FALSE
C ○ Non of the above
D ○ All of the above

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2016. S-block elements of the periodic table were made up of

A ○ Groups 1, 2 and 3
B ◉ Groups 1 and 2
C ○ Groups 3
D ○ Groups 3 to 7

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2019. Which of the following represents a carboxylic acid

A ◉ R-COOH
B ○ R-COOR
C ○ R-COOCOR
D ○ R-COH

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2024. Starch can be converted to ethyl alcohol by

A ○ Distillation
B ○ Isomerization
C ○ Cracking
D ◉ Fermentation

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2017. How many grams of bromine will be required to completely react with 10g of propane..(Br=80,C=12,H=1)

A ◉ 80g
B ○ 60g
C ○ 40g
D ○ 20g

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2018. When a gas is compressed at very low temperature

A ○ It's density decreases
B ◉ It liquefies
C ○ Its temperature decreases
D ○ Temperature increases

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2020. The furring of kettles is caused by the presence in water of

A ○ calcium hydrogentrioxocarbonate (IV)
B ◉ calcium trioxocarbonate (IV)
C ○ calcium tetraoxosulphate (VI)
D ○ calcium hydroxide

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2019. Due to the high reactivity of sodium, it is usually stored under

A ○ water
B ○ mercury
C ◉ paraffin
D ○ phenol

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2015. If 100cm$^3$ of oxygen pass through a porous plug is 50 seconds, the time taken for the same volume of hydrogen to pass through the same porous plug is? [O = 16, H = 1]

A ○ 10.0s
B ◉ 12.5s
C ○ 17.7s
D ○ 32.0

D ○ 32.0s

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2022. Calculate the amount in moles of a gas which occupies 10.5 $dm^3$ at 6 atm and 30$^oC$ [R = 082 atm $dm^3$ $K^{-1}$ $mol^{-1}$]

A ◉ 2.536
B ○ 1.623
C ○ 4.736
D ○ 0.394

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2016. Ethene is prepared industrially by

A ○ Reforming
B ○ Polymerization
C ○ Distillation
D ◉ Cracking

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2019. A particle that contains a protons, 10 neutrons and 10 electrons is

A ○ positive ion
B ○ neutral atom of a metal
C ○ neutral atom of a non-metal
D ◉ negative ion

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2024. In the laboratory preparation of trioxonitrate (V) acid the nitrogen(iv) oxide formed as a by-product is removed by

A ○ further heating
B ○ adding concentrated $H_2SO_4$
C ○ cooling the acid solution with cold water
D ◉ bubbling air through the acid solution

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2017. The gas that can be collected by downward displacement of air is

A ○ chlorine
B ○ sulphur (IV) oxide
C ○ carbon (IV) oxide
D ◉ ammonia

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2018. An oxide $XO_2$ has a vapour density of 32. What is the atomic mass of X?

A ○ 20
B ◉ 32
C ○ 14
D ○ 12

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2020. The carbon atoms on ethane are

A ○ $sp^2$ hybridized
B ◉ $sp^3$ hybridized
C ○ $sp^4$ hybridized
D ○ sp hybridized

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2019. The densities of two gases, X and Y are $0.5gdm^{-3}$ and $2.0gdm^{-3}$ respectively. What is the rate of diffusion of X relative to Y?

A ○ 0.1
B ○ 0.5
C ◉ 2.0
D ○ 4.0

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2015. The reddish–brown rust on ion roofing sheets consists of

A ○ $Fe^3 + (H_2O)_6$
B ○ $FeO.H_2O$
C ◉ $Fe_2O_3.3H_2O$
D ○ $Fe_3O_4.2H2_2O$

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2022. $C_3H_5 - COH_3 = CH_2$
The IUPAC nomenclature of the structure above is

A ○ 3-methybut-3-ene
B ◉ 2-methylbut-1-ene
C ○ 2-ethylprop-1-ene
D ○ 2-methylbut-2-ene

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2016. Calculate the mass of copper deposited when a current of 0.5 ampere was passed through a solution of copper(II) chloride for 45 minutes in an electrolytic cell. [Cu = 64, F = $96500Cmol^{-1}$]

A ○ 0.300g
B ○ 0.250g
C ○ 0.2242g
D ◉ 0.448g

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2019. $CH_2S_{(g)} + O_{2(g)} \rightarrow 2Cn + SO_{2(g)}$

What is the change in the oxidation number of copper in the reaction?

A ○ 0 to + 2
B ○ 0 to + 1
C ◉ C + 1 to 0
D ○ + 2 to + 1

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2024. The alkyl group is represented by the general formula

A ○ $C_nH_2n$
B ○ $C_nH_2n - 2$
C ◉ $C_nH_2n + 1$
D ○ $C_nH_2n + 2$

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2017. The enzyme used in the hydrolysis of starch to dextrin and maltose is

A ○ amylase
B ◉ diastatse
C ○ invertase
D ○ zymase

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2018. The reaction of halogens in the presence of sunlight is an example of

A ○ oxidation reaction
B ○ addition reaction
C ○ hydrogenation reaction
D ◉ substitution reaction

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2020. Tin is unaffected by air at ordinary temperature due to its

A ○ Low melting point
B ◉ Weak electropositive character
C ○ High boiling point
D ○ White lustrous appearance

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2019. The mass of silver deposited when a current of 10A is passed through a solution of silver salt for 4830s is – (Ag = 108 F = 96500($mol^{-1}$)

A ◉ 54.0g
B ○ 27.0g
C ○ 13.5g
D ○ 108.0g

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2015. The shape of ammonia molecules is

A ◉ trigonal planar
B ○ octahedral
C ○ square planar
D ○ tetrahedral

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2022.

\(^{226}_{88}Ra\) → \(^x_{86}Rn\) + alpha particle

A ○ 226
B ○ 220
C ○ 227
D ◉ 222

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2016. When ΔH is negative, a reaction is said to be

A ○ endothermic
B ◉ exothermic
C ○ reversible
D ○ ionic

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2019. The ideal gas laws and equations are true for all gases at

A ○ low pressures and lower temperatures
B ○ low temperatures and high pressures
C ○ high pressures and high temperatures
D ◉ low pressure and high temperatures

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2024. The salt formed from a weak acid and a strong base hydrolyzes

in water to form

A ○ A saturated solution
B ○ an acidic solution
C ○ a buffer solution
D ◉ an alkaline solution

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2017.

Incomplete oxidation of ethanol yields

A ○ $CH_3COOH$
B ○ $CH_3COCH_3$
C ○ $CH_3CH_2OCH_2CH_3$
D ◉ $CH_2CHO$

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2018. A sample of orange juice is found to have a PH of 3.80. What is the concentration of the hydroxide ion in the juice?

A ○ 1.6 \(\times\) $10^{-4}$
B ◉ 6.3 \(\times\) $10^{-11}$
C ○ 6.3 \(\times\) $10^{-4}$
D ○ 1.6 \(\times\) $10^{-11}$

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2022. For a general equation of the nature xP + yQ → mR + nS, the expression for the equilibrium constant is

A ○ k $[P]^x$ $[Q]^y$

B ○ \(\frac{[P]^x [Q]^y}{[R]^m [S]^n}\)
C ◉ \(\frac{[R]^m [S]^n}{[P]^x [Q]^y}\)
D ○ \(\frac{m[R] n[S]}{x[P] y[Q] }\)

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2016. The constituent of air necessary in the rusting process are

A ○ $O_2$ and $H_2O$
B ○ Ar and $CO_2$
C ○ $CO_2$ and $H_2O$
D ◉ $O_2$ and $CO_2$

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2019. In the laboratory preparation of ethyl ethanoate, the water present in the mixture is removed using a solution of

A ○ an hydrous $CaCl_4$
B ○ concentrated $NaCO_4$
C ○ dilute NaOH
D ◉ concentrated $H_4SO_4$

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2024. The process that occurs when two equivalent forms of a compound are in equilibrium is

A ○ Isotopy
B ◉ Resonance
C ○ Isomerism
D ○ Reforming

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2017. The acid anhydride that will produce weak acid in water is

A ○ $SO_3$
B ○ $NO_2$
C ○ $SO_2$
D ◉ $CO_2$

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2018. Temporary hard water is formed when rain water containing dissolved carbon(IV) oxide flows over deposits of

A ◉ $CaCO_3$
B ○ $Na_2CO_3$
C ○ $Na_2SO_4$
D ○ $CaSO_4$

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2020. Aluminium hydroxide is used in the dyeing industry as a

A ○ dye
B ○ dispersant
C ○ salt
D ◉ mordant

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2019. The shape of the S-orbital is

A ○ elliptical
B ○ spiral
C ○ circular
D ◉ spherical

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2015. The constituent common to duralumin and alnico is

A ○ Co
B ○ Mn
C ◉ Al
D ○ Mg



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2022. The general formula of alkanones is

A ○ RCHO
B ◉ $R_2CO$
C ○ RCOOH
D ○ RCOOR

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2016. Consider the following equilibrium system:
$2SO_{2(g)} + O_{2(g)}$ \(\rightleftharpoons\) $2SO_{3(g)}$

The addition of more $O_{2(g)}$ to the system will shift the equilibrium position to the

A ◉ Right leading to the production of more $SO_{3(g)}$
B ○ Right leading to the production of more $SO_{2(g)}$
C ○ Left leading to the production of more $SO_{2(g)}$
D ○ Left leading to the production of more $SO_{3(g)}$

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2019. The correct balanced equation for the reaction between

aluminium metal and hot concentrated tetraoxosulphate(VI)acid is ?

A ◉ $2AI_{(s)} + 6H_2SO_{4(1)} \to AI2(SO_4)_{3(aq)} + 6H_2O(1) + 3SO_{2(g)}$
B ○ $2AI_{(s)} + 3H_2SO_{4(1)} \to AI_2(SO_4)_{3(aq)} + 6H_2O(1) + 3SO_{2(g)}$
C ○ $2AI_{(s)} + 4H_2SO_{4(1)} \to AI_2(SO_4)_{3(aq)} + 8H_2O(1) + 3SO_{2(g)}$
D ○ $2AI_{(s)} + 5H_2SO_{4(1)} \to AI_2(SO_4)_{3(aq)} + 8H_2O(1) + 3SO_{2(g)}$

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2024. Which of the following gases is monoatomic?

A ◉ Argon
B ○ Chlorine
C ○ Nitrogen
D ○ Oxygen

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2017. Which of the following polymers is used in thermosetting?

A ◉ Bakelite
B ○ Nylon
C ○ Polypropene
D ○ Polystyrene

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2018. Which of the following products of biotechnology can be used as a fuel in place of petrol?

A ◉ Butane
B ○ Ethanol
C ○ Ethene
D ○ Propanol

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2020. Which of the following process does not take place in domestic water treatment?

A ○ Chlorination
B ○ Flocculation
C ◉ Neutralization
D ○ Sedimentation

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2019. Which of the following substances is a heavy chemical?

A ○ Ammonia
B ○ Barim Hydroxide
C ○ Hydrochloric acid
D ◉ Tetraoxosulphate(VI)acid

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2015. Which of the following compounds is a secondary alkanol?

A ○ Ethanol
B ○ 2-methylbutan-2-ol
C ◉ 3-methylpentan-2-ol
D ○ Propan-1-ol

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2022. Starch could be converted to glucose by the process of

A ○ Condensation
B ○ Dehydration
C ○ Fermentation
D ◉ Hydrolysis

D ◉ Hydrolysis

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2016. Which of the following reactions would take place when concentrated sodium hydroxide solution is added to palm oil?

A ○ Esterification
B ○ Neutralization
C ○ Polymerization
D ◉ Saponification

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2019. A compound has an empirical formular $CH_2O$ and molecular mass of 90.

[H = 1.00, C = 12.0, O = 16.0]

A ○ C4H10O2
B ○ C3H10O2
C ◉ C3H6O3
D ○ C2H2O4

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2024. The complete hydrogenation of benzene gives

A ○ Cyclohexene
B ◉ Cyclohexane
C ○ Hexene
D ○ Hexane

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2017. Which of the following metals is the strongest reducing agent?

A ○ Sodium
B ○ Silver
C ◉ Potassium
D ○ Copper

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2020. Consider the following reaction equation:

$CuO_{(s)} + H_{2(g)} \to Cu_{(s)} + H_2O_{(1)}$

Which substance is oxidized?

A ○ Cu
B ○ CuO
C ◉ $H_2$
D ○ $H_2O$

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