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DIPLOMA PROGRAMME / HIGHER LEVEL

IB Chemistry HL 1000-Question Bank

with Answers and Solutions

Ten original practice sets for the examination format first assessed in 2025. Each set includes both Paper 1 booklets and a complete Paper 2.

Exam guide Set directory Topic finder

Topic finder

Each number opens the first of four linked Paper 2 prompts. Follow a row from left to right to practise the same area in sets 1 through 10. The labels describe the main emphasis; several cases combine topics.

Area	Starting problem in sets 1 through 10
Particles, atoms and gases	61 · 161 · 261 · 361 · 461 · 561 · 661 · 761 · 861 · 961
Bonding and materials	65 · 165 · 265 · 365 · 465 · 565 · 665 · 765 · 865 · 965
Periodicity and classification	69 · 169 · 269 · 369 · 469 · 569 · 669 · 769 · 869 · 969
Enthalpy, cycles and fuels	73 · 173 · 273 · 373 · 473 · 573 · 673 · 773 · 873 · 973
Energetics and equilibrium	77 · 177 · 277 · 377 · 477 · 577 · 677 · 777 · 877 · 977
Amounts and reaction rates	81 · 181 · 281 · 381 · 481 · 581 · 681 · 781 · 881 · 981
Acid and base chemistry	85 · 185 · 285 · 385 · 485 · 585 · 685 · 785 · 885 · 985
Redox and electrochemistry	89 · 189 · 289 · 389 · 489 · 589 · 689 · 789 · 889 · 989
Mechanisms and polymers	93 · 193 · 293 · 393 · 493 · 593 · 693 · 793 · 893 · 993
Spectra and integrated problems	97 · 197 · 297 · 397 · 497 · 597 · 697 · 797 · 897 · 997

Paper 1B adds experimental skills: reading scales and slopes; handling uncertainty; choosing controls; assessing bias; separating, identifying and measuring substances. Paper 1A interleaves topics within every set.

Practical skills finder

Start with a skill you want to practise. Each link opens the first question in an investigation; the shared observations or apparatus description appear immediately above it.

Skill	Investigations beginning at
Plot or transform data	241 / 151 / 756
Read a graph and extrapolate	41 / 441 / 456
Estimate rates or compare models	946 / 746 / 651
Read uncertainty and judge precision	541 / 556 / 156
Check for heat or material losses	341 / 941 / 451
Choose a control, wavelength or blank	751 / 351 / 656
Interpret a separation or a spectrum	141 / 741 / 951
Follow a titration or an equilibrium	546 / 956 / 56
Connect electrical and chemical measurements	841 / 146 / 246

Return to set directory

22. Which single change, starting from a dilute He gas at fixed temperature, makes the finite volume of its particles more significant?

A. Compress it into a smaller volume
B. Remove gas while the container volume stays fixed
C. Expand it to twice the volume
D. Replace one atom by its heavier isotope at the same number density

23. Three cells are wired in series and pass the same charge. If Mg^{2+}, Ag^{+} and Al^{3+} are each deposited quantitatively in suitable separate cells, which gives the largest amount in moles?

A. Mg
B. Al
C. Ag
D. They all deposit the same number of moles

24. What holds two neutral I_2 molecules together in solid iodine?

A. Attractions between instantaneous and induced dipoles
B. Hydrogen bonding between iodine atoms
C. Permanent ion–ion attraction
D. Covalent I–I bonding from one molecule to every neighbour

25. What fraction by mass of K_3PO_4 is K? Use $M(K_3PO_4) = 212.27$ g/mol and $A_r(K) = 39.1$.

A. 0.0141 **B.** 0.184 **C.** 0.553 **D.** 0.447

26. Chlorine atoms in a model sample are 75% ^{35}Cl and 25% ^{37}Cl. What fraction of randomly paired Cl_2 molecules contain exactly one ^{37}Cl?

A. 0.375 **B.** 0.1875 **C.** 0.5625 **D.** 0.0625

27. Which organic product results from adding water to propene under acid catalysis as the major route?

A. Propan-2-ol **B.** Propanoic acid **C.** Propane **D.** Propanal

28. Why can a racemic mixture show no net optical rotation?

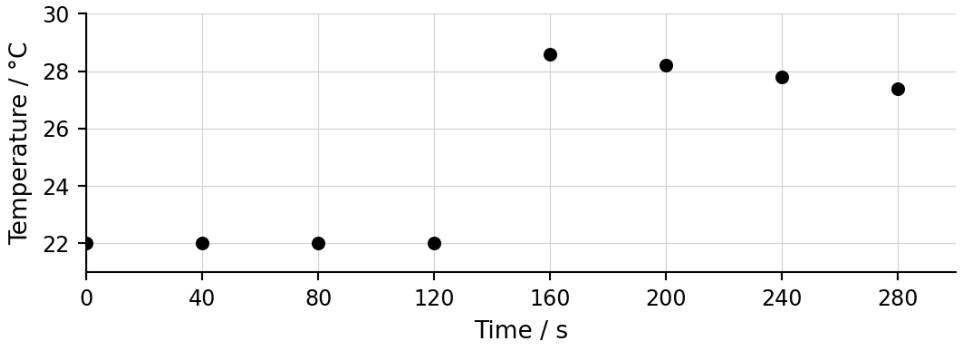
A. The enantiomers cease to exist in solution
B. The stereocentre is destroyed by plane-polarized light
C. The rotations from equal amounts of the enantiomers cancel
D. Each molecule becomes achiral at the detector

29. For $MgCO_3 \rightarrow MgO + CO_2$, find the atom economy if MgO is the desired product. $M(MgCO_3) = 84.31$ and $M(MgO) = 40.3$ g/mol.

A. 209% **B.** 47.8% **C.** 52.2% **D.** 23.9%

A cooler calorimeter

An acid and an alkali are mixed at 120 s. The graph shows the temperature before mixing and after the fast reaction. The cooling branch is approximately linear over the interval shown. Total solution mass is 100.0 g; C = 4.18 J/(g·K).



41. Estimate the temperature immediately after reaction by extending the cooling line back to 120 s. **[1]**

42. Calculate the heat absorbed by the solution using the extrapolated temperature. **[2]**

43. Would using the first post-mixing reading increase or decrease the magnitude of the molar enthalpy? Explain. **[2]**

44. Identify one assumption behind extending the straight cooling line backwards. **[1]**

45. Explain why repeating the run many times cannot correct an omitted cup heat capacity. **[2]**

107. Which pair of measurements gives complementary evidence for an alcohol group in a pure compound?

A. A sharp C=O band and a triplet integrating to three
B. An isotope peak pair alone and a boiling point below water
C. A molecular mass alone and the sample volume
D. A broad O–H infrared band and an exchangeable proton resonance

108. Cu is oxidized at one electrode and Ag^+ is reduced at the other. Why do salt-bridge anions migrate into the Cu compartment?

A. To increase the standard reduction potential of the anode
B. To replace electrons in the external metal wire
C. To plate out Ag at the anode
D. To balance Cu^{2+} entering solution

109. The first ionization energy falls from Mg to Al despite increasing nuclear charge. Which explanation best fits the electron removed?

A. Al loses a higher-energy 3p electron rather than a 3s electron
B. Al loses a neutron in the first ionization
C. Al has a lower nuclear charge than Mg
D. Mg first loses an electron from its filled 2p shell

110. A charge of 1920 C is used solely for reducing Zn^{2+} to Zn. Given M = 65.38 g/mol, what mass is deposited?

A. 1.95 g **B.** 0.651 g **C.** 39 g **D.** 0.0108 g

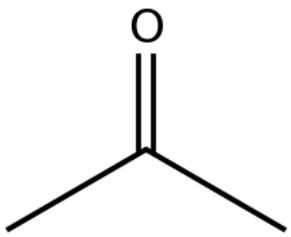
111. An atom emits photons at 600 nm and 400 nm. What is E_{400}/E_{600}?

A. 2.25 **B.** 1.50 **C.** 1.00 **D.** 0.667

112. A buffer has [conjugate base]/[acid] = 3 for $C_6H_5COO^-/C_6H_5COOH$. Using pK_a = 4.2, select its pH.

A. 4.68 **B.** 5.68 **C.** 3.72 **D.** 4.2

113. Which compound is a functional-group isomer of the structure shown?

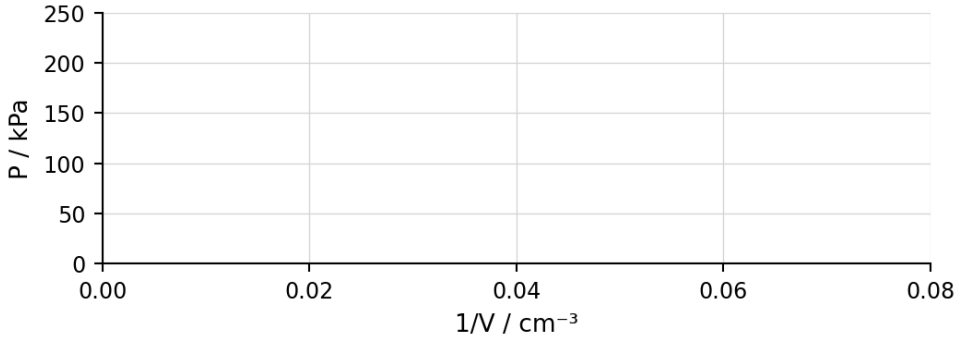


A. Propanal **B.** Propanoic acid **C.** Propan-2-ol **D.** Butanone

Pressure and a trapped air sample

A fixed amount of gas in a graduated cylinder is compressed slowly. Each reading is taken after the gas has returned to its original temperature; pressure is absolute.

V / cm³	P / kPa
15	200
20	150
25	120
30	100



151. Calculate PV for the first measurement. **[1]**

152. Use the series to identify a mathematical relationship and support it with a second numerical result. **[2]**

153. Predict the volume at 108.0 kPa from this model. **[2]**

154. Why would a pressure reading taken immediately after rapid compression be too high for the fitted relationship? **[2]**

155. Transform the four volumes to reciprocal volumes. Plot P against 1/V and draw a best-fit line. **[2]**

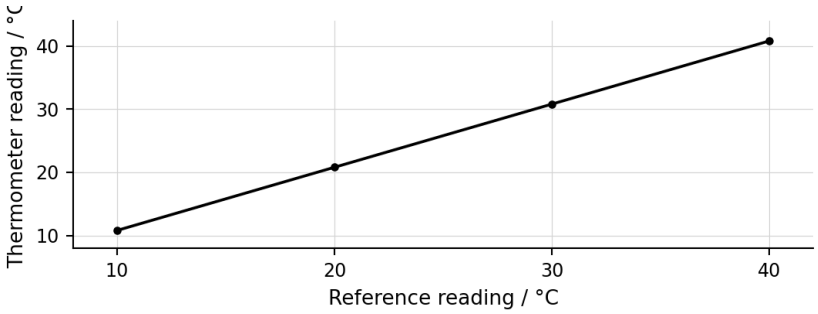
206. Two solids contain equal numbers of formula units: $Al_2(SO_4)_3$ and $MgSO_4$. What is the ratio of their oxygen atom counts, in that order?

A. 1:3 **B.** 2:1 **C.** 3:1 **D.** 12:1

207. For $SrCO_3 \rightarrow SrO + CO_2$, find the atom economy if SrO is the desired product. $M(SrCO_3) = 147.63$ and $M(SrO) = 103.62$ g/mol.

A. 142% **B.** 35.1% **C.** 29.8% **D.** 70.2%

208. The graph shows simultaneous readings for one thermometer and a reference. When ΔT is calculated from two readings on this thermometer, what happens to the displayed offset?



A. It reverses the sign of the rise
B. It doubles the apparent rise
C. It cancels from the difference
D. It adds the offset to every measured temperature change

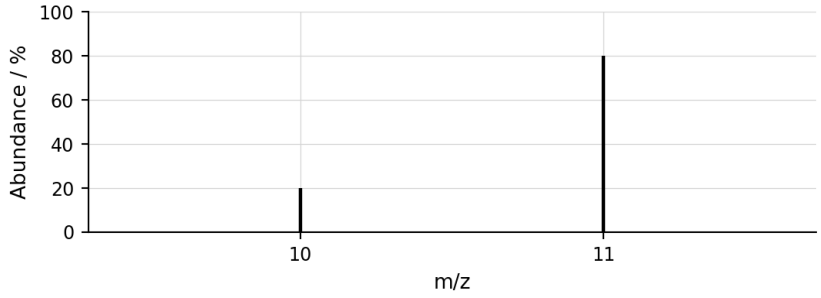
209. For ethane, compare ΔH of combustion forming $H_2O_{(g)}$ with that forming $H_2O_{(l)}$, under otherwise identical conditions.

A. The value with gaseous water is more negative
B. Changing the phase reverses the chemical equation
C. The two values are equal because the atom counts match
D. The value with gaseous water is less negative

210. For $N_2O_{4(g)} \rightleftharpoons 2NO_{2(g)}$ at constant T, an inert gas is added without changing vessel volume. What is the immediate effect on Q calculated from reacting-gas partial pressures?

A. It halves because mole fractions fall
B. It becomes zero
C. It doubles because total P rises
D. No change

333. The spectrum shows a two-isotope sample of B. Using the isotope masses marked on the axis, estimate its relative atomic mass. The lower-mass peak accounts for 20% of the ions.



A. 10.5 **B.** 8.8 **C.** 10.8 **D.** 2

334. For rate = $k[A]^2[B]^0$, [A] doubles while [B] halves at fixed temperature. By what factor does the rate change?

A. 4 **B.** 0.5 **C.** 1 **D.** 0.25

335. A burette reading increases from 1.20 to 21.45 cm^3. Each reading has uncertainty ±0.05 cm^3. What is the maximum absolute uncertainty of the titre?

A. ±0.50 cm^3 **B.** ±0.05 cm^3 **C.** ±0.025 cm^3 **D.** ±0.10 cm^3

336. How many K nuclei are in 4.25 g of anhydrous K_3PO_4 (M = 212.27 g/mol)?

A. 0.0601 nuclei
B. 4.02×10^{21} nuclei
C. 1.21×10^{22} nuclei
D. 3.62×10^{22} nuclei

337. Which feature of but-2-ene permits geometrical isomerism?

A. It contains a tetrahedral stereocentre
B. The molecule contains exactly four carbons
C. Free rotation about C=C is rapid
D. Each double-bond carbon bears two different groups

338. A carbon sheet contains fused six-membered rings and each carbon has three neighbours. Which orbital is left for π overlap in the ideal sheet?

A. A 1s core orbital
B. A d orbital from the same shell
C. A fourth sp^3 orbital
D. An unhybridized p orbital

339. For CH_3COOH, $pK_a = 4.76$. What is the numerical value of K_a?

A. 0.21 **B.** 5.75×10^4 **C.** 1.74×10^{-5} **D.** 0.00417

416. The equilibrium constant for $N_2O_{4(g)} \rightleftharpoons 2NO_{2(g)}$ is 0.25. What is the constant when the equation is reversed and then all coefficients are halved?

A. 4 **B.** 0.5 **C.** 2 **D.** 0.0625

417. A preparation requires 0.1201 mol of K nuclei supplied entirely by K_3PO_4 (M = 212.27 g/mol). What mass of salt is needed?

A. 25.5 g **B.** 2.83 g **C.** 76.5 g **D.** 8.5 g

418. A CO_2 sample and a He sample have the same temperature. Which microscopic statement is correct?

A. Their mean speeds are equal
B. The heavier particles have greater mean kinetic energy solely because of mass
C. Each CO_2 molecule has the same speed as every He atom
D. Their molecules or atoms have equal mean translational kinetic energy

419. A buffer has [conjugate base]/[acid] = 4 for $CH_3CH(OH)COO^-/CH_3CH(OH)COOH$. Using $pK_a = 3.86$, select its pH.

A. 3.86 **B.** 3.26 **C.** 5.46 **D.** 4.46

420. Which control best isolates the effect of particle size on a solid's reaction rate?

A. Change acid concentration with particle size
B. Use equal masses of the same pure solid and the same reagent conditions
C. Use equal numbers of solid fragments regardless of mass
D. Raise temperature only for larger particles

421. A sample contains only Br-79 and Br-81 and has mean atomic mass 79.98 u. Treat isotope masses as integers. What percentage of atoms are Br-81?

A. 51% **B.** 49% **C.** 75.5% **D.** 24.5%

422. Which change reduces the percentage uncertainty of a mass measured by difference on the same balance?

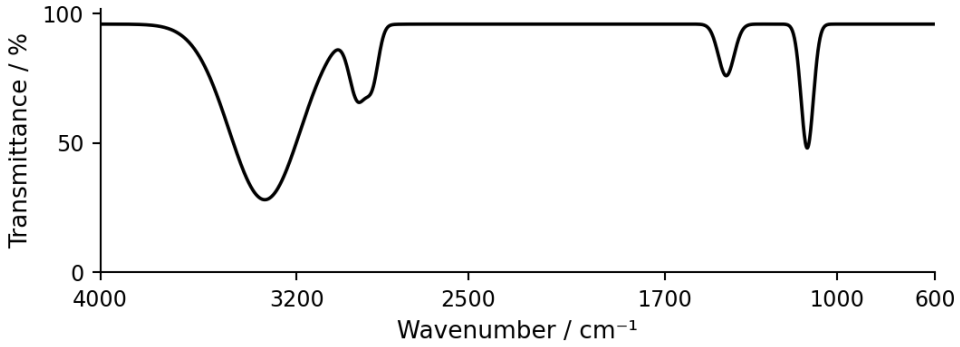
A. Take fewer readings
B. Round the sample mass before subtracting
C. Record more decimals than the balance displays
D. Weigh a larger sample if it fits the method

423. Which compound has a stereogenic carbon?

A. 2-bromobutane **B.** 2-bromopropane **C.** Bromoethane **D.** 1-bromopropane

An alcohol identified by combined spectra

A compound of formula C_3H_8O has the schematic IR spectrum shown. Its ^1H NMR gives a 6 H doublet, a 1 H septet and an exchangeable 1 H signal. Assume first-order splitting.



497. Identify the functional group responsible for the broad absorption near 3300 cm^{-1}. **[1]**

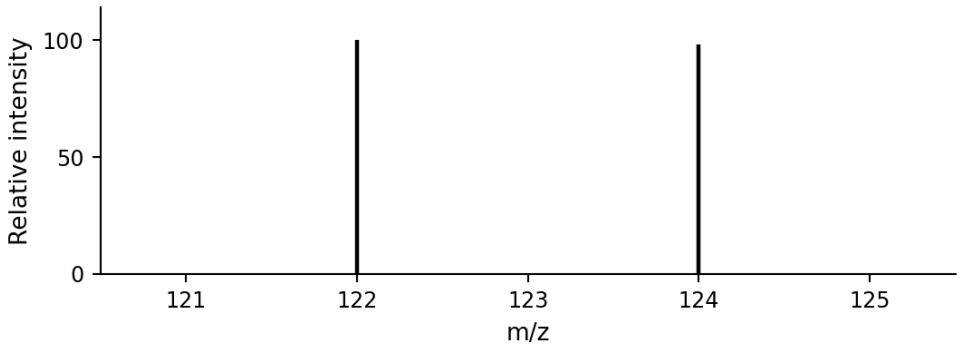
498. Use the integrations and coupling to identify the carbon skeleton near the oxygen. **[2]**

499. Give the systematic name. **[1]**

500. (a) Predict the product of ordinary oxidation to a carbonyl compound and its ^1H NMR pattern. [3]
(b) Describe two IR changes that would support conversion. [2]

A molecular ion with a partner peak

A simplified mass spectrum has molecular-ion peaks at m/z 122 and 124 of nearly equal height. The only heavy halogen present is bromine; ^{79}Br and ^{81}Br occur in roughly equal amounts. The compound is a saturated monobromoalkane. Use C = 12, H = 1 for nominal masses.



597. Explain the spacing of the two molecular-ion peaks. **[1]**

598. Deduce the formula of the alkyl group from the lighter molecular ion. **[2]**

599. Give a molecular formula consistent with both peaks. **[1]**

600. (a) Give both constitutional isomers and predict the number of distinct proton environments in each in an achiral medium. [3]
(b) A 6 H doublet is observed. Use it to select an isomer and justify. [2]

724. A cup calibration supplies 1.80 kJ and causes a 4.00 K rise. What is the total heat capacity calibrated?

A. 7.20 J/K **B.** 0.450 J/K **C.** 450 J/K **D.** 7200 J/K

725. A sample of KNO_3 of mass 3.03 g (M = 101.10 g/mol) has a measured enthalpy change of 1.045 kJ on dissolving. What is its molar enthalpy of solution?

A. 34.9 kJ/mol **B.** 0.0313 kJ/mol **C.** 0.345 kJ/mol **D.** −34.9 kJ/mol

726. The rate of a surface reaction remains unchanged when [B] doubles at fixed [A]. Which conclusion follows from this observation alone?

A. The observed order in B is zero over the range tested
B. B is not in the balanced reaction
C. B can never influence the rate
D. No B molecules are consumed

727. How many distinct ^{1}H NMR signals should propanone give in an achiral medium at low resolution? Count any OH resonance if present.

A. 2 **B.** 3 **C.** 1 **D.** 4

728. What spatial arrangement of electron domains surrounds B in BF_3, counting lone pairs as well as bonding directions?

A. linear **B.** octahedral **C.** tetrahedral **D.** trigonal planar

729. Complete combustion of propane has $\Delta H = -2220$ kJ/mol. Its molar mass is 44.10 g/mol. What energy is released per gram?

A. 25.2 kJ/g **B.** 50.3 kJ/g **C.** 2.22×10^3 kJ/g **D.** 9.79×10^4 kJ/g

730. Two gas syringes contain Ne at the same pressure but different temperatures. Which extra fact would establish that their amounts in moles are equal?

A. Their volumes alone are equal
B. Their V/T ratios are equal
C. Their masses per unit volume are equal
D. Their temperatures in Celsius add to zero

731. Which pair are position isomers?

A. Butane and but-1-ene
B. Ethanal and ethanol
C. Methane and ethane
D. Butan-1-ol and butan-2-ol

732. Which element is in the same period as Mg but has one more occupied p orbital in its ground state? Count occupied p orbitals, not p electrons.

A. Ca **B.** Ne **C.** Al **D.** Na

Which isomer forms a buffer

Two isomers of $C_3H_6O_2$ are P = CH_3CH_2COOH and Q = CH_3COOCH_3. In a rapid titration of P, 10.00 cm^3 of 0.2000 mol/dm^3 NaOH is added to 0.004000 mol P. Ignore any slow ester hydrolysis. For P, $pK_a = 4.87$.

797. Give the functional family of Q. **[1]**

798. Explain why P, but not Q, undergoes rapid stoichiometric neutralization as a weak carboxylic acid. **[2]**

799. What amount of P remains after the addition? **[1]**

800. (a) Find the pH after the addition and explain its relation to pK_a. [3]
(b) Predict the products when Q is instead completely hydrolysed in excess aqueous hydroxide. [2]

Practice set 10

Paper 1A

40 questions · 40 marks. Choose the best answer for each problem. Paper 1A and Paper 1B share two hours.

901. Dissolving 2.77 g of $CaCl_2$ (M = 110.98 g/mol) gives 200.0 cm^3 of solution. What is the analytical concentration of the salt?

A. 13.8 mol/dm^3
B. 0.125 mol/dm^3
C. 0.25 mol/dm^3
D. 1.25×10^{-4} mol/dm^3

902. How many distinct ^{1}H NMR signals should butan-2-one give in an achiral medium at low resolution? Count any OH resonance if present.

A. 1 **B.** 4 **C.** 3 **D.** 2

903. The oxygen in an oxide sample contains both ^{16}O and ^{18}O. Which statement is true for the two neutral atoms?

A. Their mass numbers differ by one
B. Their nuclei have the same neutron number
C. Their occupied ground-state electron configurations are the same
D. Only the heavier atom can form O^{2-}

904. Which first-order ^{1}H NMR pattern is expected from $CH_3COOCH_2CH_3$ under ordinary conditions (ignore fine splitting and coupling to exchangeable H)?

A. one 8 H singlet
B. a methyl singlet and an ethyl quartet–triplet pair
C. three singlets with equal areas
D. two doublets and one septet

905. Why should a calorimeter lid reduce systematic heat loss?

A. It limits heat exchange and evaporation from the liquid surface
B. It suppresses every chemical reaction
C. It makes the cup’s own heat capacity zero
D. It changes the reaction enthalpy

906. Which formula could represent an acyclic saturated aldehyde?

A. C_4H_8O **B.** $C_4H_{10}O$ **C.** C_4H_{10} **D.** C_4H_6

Problem 70 Solution

Oxide accepts protons from water, producing hydroxide. Two Na^+ ions require two OH^- ions for charge balance.

Answer: $Na_2O + H_2O \rightarrow 2NaOH$

Problem 71 Solution

$SO_3 + H_2O$ gives sulfuric acid; sulfur remains in oxidation state +6.

Answer: H_2SO_4

Problem 72 Solution

(a) In acid, oxide oxygen is incorporated into water. In strong base, balance O and H by including three waters; both Al centres enter hydroxo complexes. (b) Early metals form oxides with substantial oxide-ion character, which can accept protons. Later nonmetals form more covalent oxides that can form acids in water.

Answer: (a) $Al_2O_3 + 6H^+ \rightarrow 2Al^{3+} + 3H_2O$; $Al_2O_3 + 2OH^- + 3H_2O \rightarrow 2[Al(OH)_4]^-$. (b) Basic ionic oxides give way to more covalent acidic oxides.

A potassium chloride lattice cycle

Problem 73 Solution

The relevant step is $Cl_{(g)} + e^- \rightarrow Cl^-_{(g)}$, listed at −349 kJ/mol. The potassium ionization step instead places an electron on the product side.

Answer: Electron attachment to the halogen.

Problem 74 Solution

Combine atomization of both elements, metal ionization and halogen electron attachment: 89 + 121 + 419 + (−349) = 280 kJ/mol.

Answer: 280 kJ/mol

Problem 75 Solution

Pulling oppositely charged ions apart requires energy. This is the reverse of assembling a potassium chloride lattice, so its enthalpy has the opposite sign.

Answer: Positive.

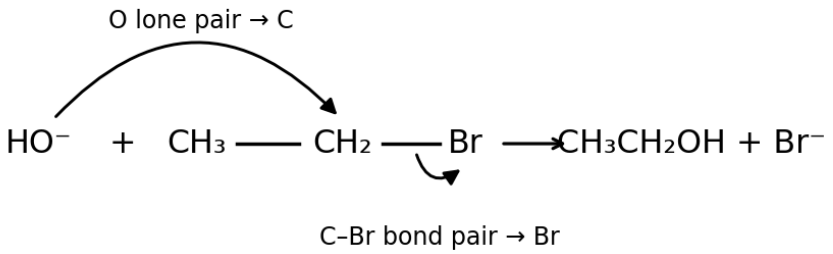
Problem 76 Solution

(a) Going from elements to solid gives −437 kJ/mol. Subtract the gas-ion formation sum, 280, to find lattice formation = −717 kJ/mol. Reverse the step for dissociation: +717 kJ/mol. (b) With charges unchanged, the electrostatic attraction weakens as distance increases, so less energy is needed to separate the ions.

Answer: (a) +717 kJ/mol. (b) Smaller magnitude at greater separation.

Problem 296 Solution

(a) The first arrow begins at the oxygen lone pair and ends at the carbon bearing Br. Simultaneously the C–Br pair moves onto Br, which leaves as Br^-. (b) Bond making and bond breaking share one transition state, with no stable cation between them. Bulky substituents impede approach to the rear of the C–Br bond.



Answer: (a) O lone pair → electrophilic C; C–Br bond → Br. (b) Concerted backside attack; crowding obstructs approach.

Locating the methoxy group

Problem 297 Solution

An acyclic saturated four-carbon formula would have ten hydrogens. The deficit of two means one ring or double bond. The observed C=O uses that allowance, leaving none for a ring.

Answer: No. The carbonyl already accounts for the only unit of unsaturation.

Problem 298 Solution

The signal integral is two, so it is assigned to CH_2. Each H on that carbon sees three equivalent adjacent CH_3 hydrogens: the first-order n + 1 rule predicts four lines.

Answer: A two-proton CH_2 group split by the three hydrogens on a neighbouring methyl group.

Problem 299 Solution

The downfield three-proton singlet identifies O–CH_3. The quartet and triplet belong to an ethyl group next to C=O.

Answer: The 3 H singlet

Problem 524 Solution

In [Ar] $4s^2$, the differentiating electron enters a s subshell. Counting the electrons at the highest principal level gives 2.

Answer: B. s block; 2

Problem 525 Solution

Zn atoms lose electrons, which travel through the wire to the electrode where Cu^{2+} is reduced. Ions, rather than electrons, carry charge in the salt bridge.

Answer: A. Electrons flow from Zn to Cu

Problem 526 Solution

An amine and a carboxyl-derived group form an amide link in the chain. An ester link would instead contain a bridging O.

Answer: A. –C(=O)–NH–

Problem 527 Solution

If $r = k'[A]^2$, treating $[A]^2$ as the horizontal variable makes the proportionality directly testable.

Answer: B. Initial rate versus $[A]^2$ should be linear through the origin

Problem 528 Solution

There are 4 regions to accommodate about O. Their electron-domain arrangement is tetrahedral; lone pairs count even though they are absent from a drawing that shows only nuclei.

Answer: D. tetrahedral

Problem 529 Solution

In a molecular solid, molecules can separate and move while their internal bonds survive. Diamond has no such discrete units.

Answer: A. Extended covalent bonding versus attractions between discrete molecules

Problem 530 Solution

$Cu \rightarrow Cu^{2+} + 2e^-$ at the anode supplies one ion for each Cu^{2+} reduced at the cathode if these are the only electrode reactions.

Answer: A. It dissolves to replenish ions removed at the cathode

Problem 531 Solution

A pure solid has unit activity in the equilibrium expression. Extra solid can change surface area and the approach rate but not the equilibrium gas composition if that phase remains present.

Answer: B. No equilibrium pressure change solely from the extra pure solid

Answer key for set 07

Paper 1A

No.	Key	No.	Key	No.	Key	No.	Key
601	D	611	A	621	A	631	D
602	A	612	D	622	A	632	A
603	A	613	D	623	D	633	C
604	D	614	C	624	B	634	C
605	C	615	B	625	B	635	C
606	B	616	B	626	C	636	B
607	B	617	A	627	D	637	C
608	D	618	B	628	D	638	A
609	C	619	B	629	B	639	A
610	A	620	C	630	D	640	C

Paper 1B

Freezing curves

No.	Answer
641	25.8 °C
642	At 2 min, 24.7 °C is below the subsequent 25.8 °C freezing plateau.
643	Solid and liquid
644	Crystallization lowers potential energy; temperature tracks mean kinetic energy.
645	Repeat with a second calibrated probe while observing crystallization.

Acidity of a food preservative

No.	Answer
646	4.2
647	0.064 mol/dm^3
648	75.0%.

No.	Answer
866	One double and 2 single bonds; 0 on C, −1 on each singly bonded O, 0 on the double-bonded O.
867	120°.
868	(a) 4/3. (b) Equivalent bonds of intermediate length.

Nickel with six donor atoms

No.	Answer
869	6
870	Ni +2; cation +2.
871	2 mol
872	(a) NH_3 donates a lone pair from N to the metal. (b) Changed d-orbital splitting changes absorption and the transmitted colour.

Comparing hydrogen and methane

No.	Answer
873	CH_4
874	H_2: 142 kJ/g; CH_4: 55.5 kJ/g.
875	Methane
876	(a) Methane; 3.11 times as much. (b) Hydrogen production, compression and delivery may cause emissions.

A sealed dimer at equilibrium

No.	Answer
877	$Q = [M]^2/[D]$ using the stated reference.
878	0.47 mol/dm^3
879	0.217
880	(a) 0.144. (b) Q = 2K; dimer reforms.

A white precipitate from two salts

No.	Answer
881	0.0032 mol
882	Second ion is limiting.
883	0.344 g