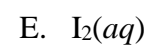
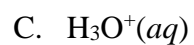
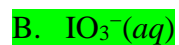
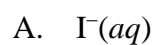
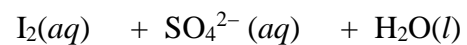
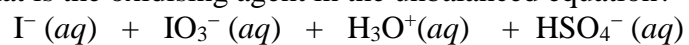


Multichoice questions - Answers

1. What is the oxidising agent in the unbalanced equation?



2. Oxalate ions ($\text{C}_2\text{O}_4^{2-}$)

9. Which kind of attractive forces are likely to be holding particles together in a substance that melts at 681°C and that conducts electricity when molten but not when solid?
- A. Ionic bonding
 - B. Metallic bonding
 - C. Dipole-dipole interactions
 - D. Network covalent bonding
 - E. Covalent molecular bonding
10. At room temperature, fluorine is a gas (boiling point -188°C), while bromine is a liquid (boiling point $+59^{\circ}\text{C}$). Which one of the following best explains the difference in the physical states of these two halogens?
- A. The covalent bonds in bromine are more polar.
 - B. The covalent bonds in bromine are stronger.
 - C. The covalent bonds in bromine are weaker.
 - D. The intermolecular forces in bromine are stronger.

17. What is the correct classification of these alcohols?

	1	2	3
A	tertiary	primary	secondary
B	tertiary	secondary	primary
C	tertiary	tertiary	secondary
D	secondary	primary	secondary
E	secondary	tertiary	secondary

18. Methyl-t-butyl ether, $C_5H_{12}O$, can be added to gasoline to promote cleaner burning. How many moles of oxygen gas, O_2 , are required to burn 1.0 mol of this compound completely to form carbon dioxide and water?

- A. 9.5 mol B. 8.0 mol C. 7.5 mol D. 6.0 mol E. 4.5 mol

19. A hydrocarbon X of molecular formula C_6H_{14} was allowed to react with limited chlorine gas in the presence of light. The resulting mixture produced only two monochloroalkane

27. Which of the alcohols below would give a carboxylic acid when reacted with $\text{K}_2\text{Cr}_2\text{O}_7/\text{H}^+$?

A.

B.

C.

D.

35. For the reaction $X \rightleftharpoons Y$, an initial concentration of 1.0 mol L^{-1} X is allowed to come to equilibrium. If $K = 10$, what is the equilibrium concentration of Y?

- A. 0.10 mol L^{-1} B. 0.50 mol L^{-1} **C. 0.91 mol L^{-1}** D. 1.1 mol L^{-1} E. 10 mol L^{-1}

36. The C=O double bond has a bond length of 0.122 nm and a bond energy of about 740 kJ mol^{-1} in some organic compounds. Which of the following pairs of figures is most likely to be correct for a C – O single bond?

	Bond length, nm	Bond energy, kJ mol^{-1}
A	0.113	335
B	0.113	1080
C	0.116	805
D	0.143	360
E	0.143	1080

37. The ionic-product constant for water, K_w , at $45 \text{ }^\circ\text{C}$ is 4.0×10^{-14} . What is the pH of pure water at this temperature?

- A. 6.7** B. 7.0 C. 7.3 D. 8.5 E. 13.4

38. What is the pH of a 0.025 mol L^{-1} solution of KOH?

- A. 1.60 B. 3.69 C. 7.00 D. 10.31 **E. 12.40**

39. What is the conjugate acid of HPO_4^{2-} ?

- A. $\text{H}_3\text{PO}_4(\text{aq})$ **B. $\text{H}_2\text{PO}_4^-(\text{aq})$** C. $\text{H}_3\text{O}^+(\text{aq})$ D. $\text{H}^+(\text{aq})$

50. Bob dissolved 4.021 g of NaOH in water and made up the solution to 1 litre with water. He then pipetted 10.00 mL of this solution into a flask and titrated it with 0.0500 mol L⁻¹ HCl solution from a burette. A volume of 20.42 mL of acid had been used at the endpoint. Bob's teacher deduced that:

A. 