

APOLLO

Electrochemistry

FBISE Chemistry Class 9 (SSC-I)

Domain B: Physical Chemistry

29 questions | questions

Original FBISE question crops. National Curriculum 2022-23 topic.

8.	Which change is an example of oxidation?	chloride ions to chlorine atoms	copper(II) ions to copper atoms	iron(III) ions to iron(II) ions	oxygen atoms to oxide ions
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9.	In which change is the nitrogen reduced?	NH_3 to NO	NH_3 to NO_3^-	N_2 to NH_3	N^{3-} to N
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35.	Which series of changes includes both oxidation and reduction?	$C \rightarrow CO$ $\rightarrow CO_2$	$PbO_2 \rightarrow PbO$ $\rightarrow Pb$	$N_2 \rightarrow NH_3$ $\rightarrow NO$	C_2H_2 $\rightarrow C_2H_4$ $\rightarrow C_2H_6$
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36.	A colourless gas is passed into each of three different solutions. The results for each solution are shown in the table.		an acid	an alkali	an oxidising agent	a reducing agent
	Solution	Result				
	Potassium iodide	Stays Colourless				
	Acidified potassium dichromate	Orange to green				
	Acidified potassium permanganate	Purple to colourless				
	What is the colourless gas?					

OR	Calcium ions (Ca^{2+}) combine with chloride ions (Cl^-) to form a compound, and a molecule is shown where one carbon atom is joined with two oxygen atoms. If 11.1 g of the ionic compound and 4.4 g of the molecular substance are given, write the correct formula and name of the ionic compound, find the formula of the molecular substance from its structure, and calculate the number of moles in each sample using the relation $\text{moles} = \text{mass} / \text{molar mass}$.	1+ 1+ 2+ 2
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Q8	Draw a well-labelled reaction pathway diagram for an exothermic and endothermic reaction, clearly showing reactants, products, activation energy, and enthalpy change with proper labelling. Briefly interpret through energy diagram that how the catalyst affects the energy profile.	2 +2 +2
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Identify the oxidizing and reducing agents in the following reaction: درج ری ایکشن میں آکسڈائزنگ اور ریڈیوسنگ ایجنٹ کی شناخت کریں: $\text{H}_2\text{S} + \text{Cl}_2 \longrightarrow \text{S} + 2\text{HCl}$	03
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OR	What is corrosion? Write its chemical reaction. Describe any one method to prevent corrosion. کوروشن کیا ہے؟ اس کی کیمیائی مساوات لکھیں۔ نیز اس کی روک تھام کا کوئی ایک طریقہ بیان کریں۔	1+1 +2
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OR	Identify the oxidizing and reducing agents in the following reaction: درج ری ایکشن میں آکسڈائزنگ اور ریڈیوسنگ ایجنٹ کی شناخت کریں: $2\text{KI} + \text{Cl}_2 \longrightarrow 2\text{KCl} + \text{I}_2$	
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2+2	OR	Explain following methods of prevention of corrosion:	2.5 + 1.5
		a) Sacrificial protection b) Galvanizing	

5.	$Fe_2O_3 + 3CO \longrightarrow 2Fe + 3CO_2$ درج تعامل میں ریڈیوسنگ ایجنٹ کی شناخت کریں:	Fe_2O_3	CO	Fe	CO_2

OR	How the sum of oxidation numbers in given polyatomic ions is equal to charge on the ion? Calculate:	03
	درج پولی ایٹمک آئنز کا چارج کس طرح اس کے آکسائیڈیشن نمبر کے مجموعہ کے برابر ہے؟ سیکیولٹ کریں:	
	a. NH_4^{+1} b. CO_3^{-2}	

3.	The sum of oxidation numbers of all atoms in a sulfate ion (SO_4^{2-}) must be:	-2	-1	0	+2
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In the given reaction $2Na + Cl_2 \rightarrow 2NaCl$ sodium changes its oxidation state from 0 to +1, it is the process of:	Oxidation	Reduction	Elimination	Addition
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Derive the chemical formula of the compound formed between:	1x3
a. Mg^{2+} and Cl^- c. Ca^{2+} and NO_3^{-1} b. Al^{3+} and SO_4^{-2}	

Q.4	Identify the oxidizing and reducing agents in given reactions by assigning their oxidation states (H=+1, O=-2)	3+3
	a. $WO_3 + 3H_2 \rightarrow W + 3H_2O$ b. $H_2S + Cl_2 \rightarrow 2HCl + S$	

(v)	Identify which of the following element in the given reaction is oxidized $H_2S + Cl_2 \rightarrow 2HCl + S$	H	Cl	S	S and Cl_2
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OR	Identify oxidizing agents in each of the following reactions. a. $2\text{NH}_3 + 3\text{CuO} \rightarrow 3\text{Cu} + \text{N}_2 + 3\text{H}_2\text{O}$ b. $2\text{FeCl}_2 + \text{Cl}_2 \rightarrow 2\text{FeCl}_3$	1.5+1.5 5
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Q.5	Analyze the bond formation between magnesium (Mg) and fluorine (F). میدگنیشیم (Mg) اور فلورین (F) میں بانڈ کس طرح بنتا ہے؟ تجزیہ کریں۔	04	OR	Explain electroplating of following metals on steel. i Zinc (Zn) زک ii Tin (Sn) ٹن درج شدہ میٹلز کی سٹیل پر الیکٹروپلیٹنگ بیان کریں۔	2+2
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	$^{12}_6\text{C}$	$^{14}_7\text{N}$	$^{16}_8\text{O}$	$^{19}_9\text{F}$
Reducing agent when it undergoes oxidation, it:	Loses electron	Gained electron	Gains Hydrogen	Loses Oxygen

(i)	Differentiate between soft and hard metals with one example each. نرم اور سخت دھاتوں میں فرق کریں اور ایک ایک مثال دیں۔	2+1	OR	Determine the oxidation number of nitrogen in NO_2^{-1} ? میں نائٹروجن کی آکسائیڈیشن اسٹیٹ معلوم کریں۔	03
(ii)	Briefly explain any three crystalline allotropes of carbon			Find by calculation, the compound in which Sulphur	

(ii)	Briefly explain any three crystalline allotropes of carbon. کاربن کی کوئی سی تین کرسٹالائن صورتوں کی مختصر وضاحت کریں۔	1x3	OR	Find by calculation, the compound in which Sulphur (S) has oxidation state of +7. معلوم کریں کہ کس مرکب میں سلفر کی آکسائیڈیشن اسٹیٹ +7 ہے۔	03						
				<table><tr><td>a.</td><td>SO_3</td></tr><tr><td>b.</td><td>H_2SO_4</td></tr><tr><td>c.</td><td>$H_2S_2O_8$</td></tr></table>	a.	SO_3	b.	H_2SO_4	c.	$H_2S_2O_8$	
a.	SO_3										
b.	H_2SO_4										
c.	$H_2S_2O_8$										
(iii)	Give three points for differentiating between voltaic cell and electrolytic cell			Enlist any three uses of platinum.							

(iv)	What is corrosion? Enlist the methods for preventing corrosion. (any two) زنگ لگنا (corrosion) کیا ہے؟ اس کو روکنے کے طریقے درج کریں۔ (کوئی سے دو)	1+2
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(viii)	Determine the oxidation number of B in H_3BO_3 . H_3BO_3 میں B کا آکسائیڈیشن نمبر معلوم کریں۔	03
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	What is a redox reaction? How oxidation and reduction occur simultaneously? Explain with an example.
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10	In an electrolytic cell, the cathode is the electrode where:	Oxidation occurs	Electrons are lost	Reduction occurs	No reaction occurs
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(ix)	Determine the oxidation number nitrogen in: درج شدہ میں نائٹروجن کا آکسیدیشن نمبر معلوم کریں۔ a. NO_2 b. N_2O c. N_2O_3	03	OR	Identify the position of following in periodic table by their electronic configuration: a. $1s^2 2s^2 2p^6 3s^2 3p^4$ b. $1s^2 2s^2 2p^6 3s^2 3p^1$ پیریاڈک ٹیبل میں درج شدہ کی پوزیشن ان کی الیکٹرانک کنفیگوریشن کے ذریعے معلوم کریں۔	1.5 + 1.5
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(v)	Describe oxidation state. How it differs from ionic charge? آکسیدیشن حالت کی وضاحت کریں۔ اس کی آئونی چارج سے کیا فرق ہے؟	2+1
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OR	Briefly describe cathodic protection. (Diagram is not required) کیتھوڈک پکٹیشن کی مختصر وضاحت کریں۔ (ڈیگرام کی ضرورت نہیں ہے۔)	03
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