



CHEMISTRY

BOOKS - PEARSON IIT JEE FOUNDATION

Language of Chemistry and Transformation of Substances

Very Short Answer Type Questions

1. In the table given below some commonly used positive and negative radicals are listed. Use the crisscross method to obtain the formulae of the compound that is formed using the given radicals. Name the compound thus obtained.

S. No.	Positive radicals	Negative radicals	Formula	Name of the compound
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1.	Na^+	Cl^-		
2.	Na^+	CO_3^{-2}		
3.	Al^{+3}	PO_4^{-3}		
4.	Zn^{+2}	PO_4^{-3}		
5.	Ca^{+2}	NO_3^{-1}		
6.	Al^{+3}	CO_3^{-2}		
7.	K^{+1}	SO_4^{-2}		
8.	NH_4^{+1}	SO_4^{-2}		
9.	Ni^{+2}	S^{-2}		
10.	Al^{+3}	C^{-1}		
11.	Ag^{+2}	Br^{-1}		
12.	Ca^{+2}	F^{-1}		
13.	Li^{+1}	H^{-1}		
14.	Al^{+3}	N^{-3}		
15.	Fe^{+3}	O^{-2}		
16.	Na^+	I^{-1}		
17.	K^{+1}	MnO_4^{-1}		
18.	H^{+1}	ClO_3^{-1}		
19.	Ca^{+2}	HSO_4^{-1}		
20.	H^{+1}	NO_2^{-1}		
21.	H^{+1}	SO_3^{-2}		
22.	Ca^{+2}	P^{-3}		
23.	K^{+1}	OH^{-1}		
24.	H^{+1}	NO_3^{-1}		
25.	H^{+1}	SO_4^{-2}		
26.	H^{+1}	S^{-2}		
27.	Cu^{+1}	S^{-2}		

S. No.	Positive radicals	Negative radicals	Formula	Name of the compound
28.	Cu^{+2}	Cl^{-1}		
29.	Hg^{+2}	Cl^{-1}		
30.	Na^{+}	PO_3^{-3}		
31.	Ba^{+2}	PO_4^{-3}		
32.	Ca^{+2}	HCO_3^{-1}		
33.	NH_4^{+1}	OH^{-1}		
34.	NH_4^{+1}	HPO_4^{-2}		
35.	K^{+1}	$\text{H}_2\text{PO}_4^{-1}$		
36.	H^{+1}	Cl^{-}		
37.	H^{+1}	ClO^{-1}		
38.	H^{+1}	ClO_4^{-1}		
39.	H^{+1}	ClO_2^{-1}		
40.	K^{+1}	CrO_4^{-2}		
41.	K^{+1}	$\text{Cr}_2\text{O}_4^{-2}$		
42.	Sn^{+4}	S^{-2}		
43.	Cr^{+3}	SO_4^{-2}		
44.	NH_4^{+1}	$\text{Cr}_2\text{O}_4^{-2}$		
45.	Fe^{+3}	OH^{-1}		
46.	Pb^{+4}	Cl^{-1}		
47.	Mn^{+2}	O^{-2}		
48.	Ba^{+2}	CO_3^{-2}		
49.	Na^{+1}	ZnO_2^{-2}		
50.	Pb^{+2}	NO_3^{-1}		



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2. Why is the burning of LPG a chemical change?



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3. The formula of ammonium bisulphate is _____ .



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4. Balance the following chemical equations

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5. Plumbous ion is represented as _____ .



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6. What is the difference between photochemical and thermochemical reactions?



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7. What is an inhibitor? What is the inhibitor used in the preparation of H_2SO_4 ?



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8. In the table given below some compounds are listed. In each case identify the positive and negative radicals present in the compound .

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9. The compound SF_6 is named as _____ .

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10. For each of the following reactions identify the products formed and balance the reaction.

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11. Why is a physical change reversible?

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12. What is the difference between synthesis and analysis?

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13. The reaction $Fe + S \rightarrow FeS$ represents _____

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14. Why is the action of heat on iodine a physical change?

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15. What is meant by oxidation and reduction?

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16. What is the change that takes place when common salt is dissolved in water?

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17. Stibnum is the Latin name of _____ .

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18. Define exothermic reaction. Give an example.

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19. $Ag + CuSO_4 \rightarrow Cu + AgSO_4$

Is this reaction possible ? Explain.

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20. Why do chemical reactions involve loss or gain of energy?

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21. What is meant by oxidation and reduction?

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22. When Fe^{+2} combines with O^{-2} , the compound obtained is _____ .

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23. What is a displacement reaction?

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24. What is chemical decomposition? Give one example.

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25. What are catalytic reactions? Give an example.

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26. Define endothermic reaction. Give one example.

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27. $N_2 + 3H_2 \rightarrow 2NH_3 + X \text{ kcal/X mole}$, then the formation of NH_3 involves _____ of energy with respect to reactants.

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28. The symbols of carbon and cobalt are _____ and _____ respectively.

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29. The symbol S stands for _____ .

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Short Answer Type Questions

1. Sugar, on being treated with H_2SO_4 , forms a black residue. If we observe the weights of sugar and the residue, we find a difference in weights. Why?

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2. Durning of candle is an example of both physical and chemical changes. Justify your answer.

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3. What is chemical equation? Write the steps involved in writing a chemical equation

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4. Write the differences between reduction and oxidation.

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5. To obtain hydrogen and oxygen from water, what are the conditions to be maintained? What are the different names that can be given to this reaction?

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6. Why are the double decomposition reactions also called double displacement reactions?

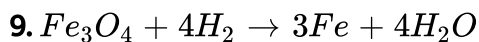
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7. Write the steps in naming a binary compound formed by two non-metallic elements, except hydrogen, with the help of an example .

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8. Write the steps in naming a base.

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$2Na + Cl_2 \rightarrow 2NaCl$. Identify the oxidizing agent in the given reactions.

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10. Photolysis comes under which type of chemical reaction? Explain it with an example.

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11. Write the characteristics of a chemical reaction.

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12. Classify the following into physical and chemical changes.

(i) Freezing of water (ii) Fermentation of alcohol

(iii) Burning of coal (iv) Breaking of glass

(v) Glowing of an electric bulb

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13. Why do we need to use formulae?



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14. Write the steps in naming oxyacids ,

(i) with greater number of oxygen atoms and

(ii) with less number of oxygen atoms.



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Essay Type Questions

1. Explain the law of definite proportions with an example.



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2. Give the differences between oxidation and reduction in terms of oxygen, hydrogen, electropositive element and electronegative element.



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3. What is a decomposition reaction? Explain different decomposition reactions with equations.

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4. What is a chemical combination reaction? Explain the different types of combination reactions.

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5. State the law of multiple proportion with example.

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Concept Application Concept Application Level 1

1. Formula for potassium biphosphate is $KHPO_4$.

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2. The compounds H_2O and D_2O follows Law of multiple proportions.

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3. A_2X is comprised of two divalent negative radicals and one monovalent positive radical.

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4. Formation of sodium nitrite and oxygen by thermal decomposition of sodium nitrate involves only chemical change.

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5. The reaction $C + O_2 \rightarrow CO$, follows the law of conservation of mass.

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6. Valency of sulphur in SO_2 is 2.

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7. In exothermic reactions, the energy of products is more than the energy of reactants.

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8. The valencies of sulphur in hydrogen sulphide and sulphur dioxide are _____ and _____ respectively.

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9. When 58 g of $Mg(OH)_2$ reacts with 98 g of H_2SO_4 , it gives 36 g of H_2O and _____ of $MgSO_4$.



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10. If the molecular weight of a compound Na_xSO_y is 142, then the values of X and Y are respectively _____ and _____ .



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11. In $Sn + HNO_3 \rightarrow Sn(NO_3)_2 + H_2O + NH_4NO_3$, the valencies of Sn are _____ .



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12. In binary compounds, suffix _____ is added to the second element.



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13. The symbol of the element _____ is F.



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14. The reverse reaction of neutralization is _____ .



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