

Sample Paper

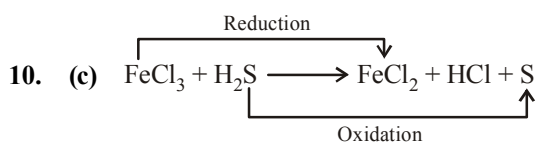
4

ANSWER KEYS

1	(a)	7	(a)	13	(b)	19	(d)	25	(d)	31	(c)	37	(b)	43	(c)	49	(c)	55	(a)
2	(d)	8	(b)	14	(a)	20	(a)	26	(b)	32	(a)	38	(d)	44	(b)	50	(c)	56	(a)
3	(a)	9	(a)	15	(b)	21	(a)	27	(b)	33	(c)	39	(a)	45	(c)	51	(a)	57	(b)
4	(c)	10	(c)	16	(c)	22	(d)	28	(a)	34	(a)	40	(b)	46	(a)	52	(d)	58	(b)
5	(b)	11	(c)	17	(d)	23	(b)	29	(c)	35	(b)	41	(a)	47	(b)	53	(d)	59	(d)
6	(a)	12	(b)	18	(d)	24	(a)	30	(d)	36	(d)	42	(b)	48	(b)	54	(a)	60	(d)



1. (a) $\text{H}_2\text{S}(\text{g}) + \text{Cl}_2(\text{g}) \rightarrow 2\text{HCl}(\text{g}) + \text{S}(\text{s})$
- $\xrightarrow{\text{oxidation}}$
 $\xleftarrow{\text{reduction}}$
2. (d) The given solution is basic in nature when excess of HCl is added, it becomes acidic.
3. (a) Carbon tetrachloride is a covalent compound.
4. (c) $\text{C}_3\text{H}_8 + 5\text{O}_2 \rightarrow 3\text{CO}_2 + 4\text{H}_2\text{O}$
5. (b)
6. (a) Calcium (Ca) combines with oxygen to form calcium oxide (CaO) which has a high melting point and dissolves in water to form $\text{Ca}(\text{OH})_2$.
7. (a) When H_2CO_3 is heated it gives off H_2O and CO_2 .
8. (b) 9. (a)



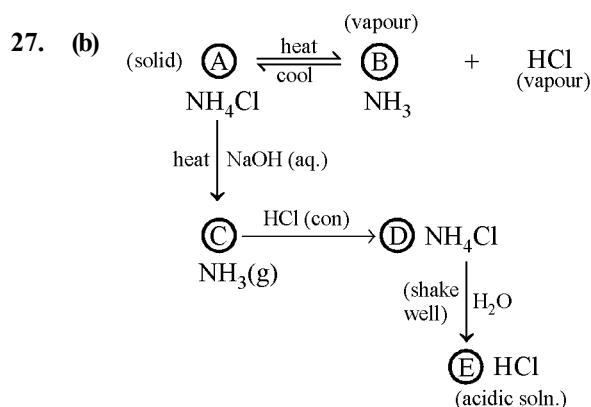
In the given reaction H_2S undergoes oxidation, hence behave as a reducing agent.

11. (c) 12. (b) 13. (b) 14. (a) 15. (b) 16. (c)
17. (d)
18. (d) Using mirror formula

$$\frac{1}{f} = \frac{1}{v} + \frac{1}{u} \Rightarrow \frac{-1}{50} = \frac{1}{-75} + \frac{1}{u}$$

$$\frac{1}{u} = \frac{1}{75} - \frac{1}{50} = \frac{2-3}{150} = \frac{-1}{150} \Rightarrow u = -150 \text{ cm}$$

19. (d)
20. (a) Difference in refractive indices of blue and green colour are less so they are seen together and red is seen separate because deviation depends on refractive index.
21. (a) If ray of light incident perpendicularly (0° with normal), no refraction occurs.
22. (d)
23. (b) For real and inverted image, magnification is negative.
24. (a)
25. (d) Since 10 mL of NaOH requires HCl = 8 mL
- 20 mL of NaOH will require HCl = $\frac{8}{10} \times 20 \text{ mL} = 16 \text{ mL}$
26. (b) $\text{Mn} + 2\text{HNO}_3 \rightarrow \text{Mn}(\text{NO}_3)_2 + \text{H}_2$
- Hydrogen gas is evolved when Mn reacts with very dilute HNO_3 .



A = NH_4Cl ; D = NH_4Cl

Hence correct statement is: A and D are chemically same.

28. (a) Na_2CO_3 is formed from NaOH and H_2CO_3 i.e, strong base and weak acid.
29. (c) The gas SO_2 is acidic but can not change the colour of dry litmus.
30. (d)
31. (c) Dry HCl gas does not show acidic character in absence of water. Therefore do not change the colour of blue litmus in dry condition.
32. (a) Sodium, potassium and magnesium are reactive elements and found at the top of the reactivity series. They do not occur in free state.
33. (c)
34. (a) It is due to phenomenon called Tyndall effect.
35. (b) Corrosion occurs due to oxidation of iron.
36. (d) Bilirubin is yellow compound that occurs in the catabolic pathway which breaks down hence in vertebrates it is not an enzyme. Other options *i.e.*, lipase, amylase, and trypsin are lipid digesting, starch digesting and endopeptidase enzymes respectively.
37. (b)
38. (d) Pancreatic juice contains Pancreatic proteases (such as trypsin and chymotrypsin), Pancreatic amylase and Pancreatic lipase.
39. (a) 40. (b)
41. (a) Due to tensile strength of water, a column of water within xylem vessels of tall trees does not break under its weight.
42. (b) In the human adult, the bone marrow produces all of the red blood cells, 60-70 percent of the white cells (i.e., the granulocytes), and all of the platelets. The reticuloendothelial tissues of the spleen, liver, lymph nodes, and other organs produce the monocytes (4-8 percent of the white cells).
43. (c) Bluish colour of water in deep sea is due to scattering of light.
44. (b)
45. (c) Refraction of light is due to change in speed of light.
46. (a)
47. (b) Given: $d_1 = 5 \text{ cm}$, $\mu_1 = 1.33$
 $d_2 = 2 \text{ cm}$, $\mu_2 = 1.5$
 d_1 and d_2 are the thickness of slabs of medium with refractive index μ_1 and μ_2 , respectively.
- using formula, $d = \frac{d_1}{\mu_1} + \frac{d_2}{\mu_2} + \dots$
- Apparent depth, $d = \frac{5}{1.33} + \frac{2}{1.5} = 5.088 \text{ cm} = 5.1 \text{ cm}$
48. (b) According to Arrhenius, acids are those substances which give proton in aqueous solution, hence gaseous HCl is not an Arrhenius acid.
49. (c) Ag does not displace hydrogen from acids since it is below hydrogen in activity series.
50. (c) Since silver is less reactive than copper it does not react with copper sulphate solution.
51. (a) Gold is a noble metal.
52. (d) Copper will displace silver from silver nitrate solution because copper lies above silver in reactivity series of metals.
53. (d) 54. (a) 55. (a) 56. (a)
57. (b) Speed of light is same for all colours of white light in air but different colours have different wavelengths and frequencies.
58. (b) Red 59. (d) Violet
60. (d) Violet