

CHEMISTRY

BOOKS - OSWAAL PUBLICATION

Solved Paper 2017-1

Excersice

1. Classify the following into meta or ortho and para directing groups:: -CN



1. State Avogadro's law.

How many atoms of Hydrogen are present in 1 mole of water?



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2. Give the ideal gas equation for n moles of a gas.



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3. Write the conjugate base of HCO_3^- .

4. Define electronegativity.



5. Which metal can displace hydrogen from dilute acids from the following data.

$$E_{zn\,/\,zn^{2+}}\,=\,-\,076V.\,E_{Cu\,/\,Cu^{2+}}\,=\,0.343V$$



6. Give the chemical formula of washing soda.



7. What is dry ice?

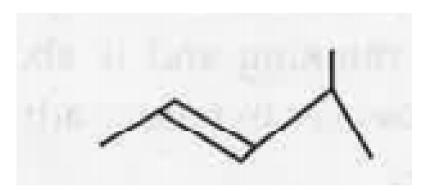


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8. Mention the type of hybridization of carbon in graphite.



9. Write the IUPAC name of





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10. Name the organic product obtained when sodium benzoate is treated with sodalime.



11. Define mole. Calculate number of moles is 49 g

 H_2SO_4 (Atomic Mass of $H=1,\,O=16,\,S=32$)

12. What do you mean by critical volume (Vc)? Give the unit of coefficient of viscosity.



13. Give any two difference between σ and π bond.



14. What happens when sodium metal is heated in air? Give equation.



15. Why corbon monoxide is poisonous? Explain.



16. Write a note on geometrical isomerism in 2-butene.



17. What are electrophiles? Give one example.



18. What is meant by Biochemical Oxygen Demand (BOD)? What is its significants?



19. Name any one gas pollutant that can pollute environment.



20. Write a brief note on s,p and d block elements.



21. Discuss the sp^2 hybridisation in BCI_3 molecule. Give the orbital picture.



22. Write any three postulates of VSEPR theory.



Write the molecular orbital electronic 23. configuration for carbon monoxide molecule. Calculate its bond order and comment on its magnetic property.



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24. Balance the redox reaction using oxidatin number method: $MnO_4^{-\,(\,aq)}
ightarrow MnO_2(s) + BrO_3^{-\,(\,aq)}$ acidic medium)



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25. Complete the reaction: $CO(g) + H_2O(g) \stackrel{\Delta}{\longrightarrow}$



26. Complete the reaction:
$$CO(g) + H_2O(g) \stackrel{\Delta}{\longrightarrow}$$

27. Complete the reaction: $Zn(s) + 2H^{+}(aq)
ightarrow$





28. Write the equations during the preparation of sodium carbonate by solvay process.



29. Graphite is a good conductor of electricity. Give reason.



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30. Give the chemical formula of borazine.



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31. Complete the equation:- $HCOOH \xrightarrow[373K]{conc. H_2SO_4}$



32. An organic compound contains 4.05% hydrogen, 24.26% carbon and 71.67% chlorine. Its milecular mass is 98.96. Find its empirical and molecular formula (Atomic mass of $H=1,\,C=12,\,Cl=35.45$)



33. Calculate the molar mass of glucose.



34. State the three postulates of Bohr's theory of hydrogen atom.



35. Write the de Broglie's equation.



36. Name the orbital when n=3 and l=2



37. Name the four quantum numbers and mention what they indicate.



38. State Aufbau principle.



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39. Write three postulates of Kinetic theory of gases.



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40. On a ship sailing in pacific ocean where temperature is 23.4° C. a ballon is filled with 2L air What will be the volume of the balloon when ship reaches indian ocean where temperature is 26.1° C?

41. State Hess's law of constant heat summation.



42. Calculate ΔG° for conversion of oxygen to ozone

$$3/20_2(g)
ightarrow O_3(g)$$
 at 298K if $Kp=2.47 imes 10^{-29}$



43. In the equation

$$2H_2(g) + O_2(g) o 2H_2O(L), \Delta H = \ -571.6 KJ ext{mol}^{-1}$$

What is the enthalpy of formation of a water molecule.



44. The enthalpy of combustion of one mole of benzene, carbon and hydrogen are-3267 kj mol-1, -393.5 kj mol^{-1} and -285.8 kj mol^{-1} respectively. Calculate the stnadard enthalpy of formation of benzene.



45. What is the change in entropy when ice melts to given water.



46. Derive the ionic product of water and give its value at $25\,^{\circ}\,C$.



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47. What is buffer solution? Give one example of acidic buffer solution.



48. If Ka of weak acid is found to be $1.78 imes 10^{-5}$ What is the PK_a value?



49. What happens to the PH of water when NH_4Cl solid is dissolved in it and why?



50. Give the Kp expression of the equation $H_2(g) + I_2(g) \Leftrightarrow 2HI(g).$



51. Write the principle involved in the estimation of carbon and hydrogen. Give diagram and calculation.



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52. Write the resonance structure of benzene.



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53. How sulphur is estimated by Carius method and give calculation.



54. Explain position isomerism with example.



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55. Explain the mechanism of nitration of benzene .



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56. Explain Wurtz reaction with example.

