CHEMISTRY

BOOKS - UNITED BOOK HOUSE

Question Papers 2018

Example

1. Which of the following is the ground state electronic configuration of Cr?(Atomic number of Cr is 24)

A. $1s^2 2s^2 2p^6 3s^2 3p^6 3d^4 4s^2$

B. $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^1$

C. $1s^2 2s^2 2p^6 3s^2 3p^6 3d^6$

D. $1s^2 2s^2 2p^6 3s^2 3s^2 3p^6 3d^3 4s^2 4p^1$

Answer:

Watch Video Solution

2. The state of hybridisation of the central atom of which of the following is sp^3d^2?

A. SF_4

B. PCl_5

C. SF_6

D. SO_4^{2-}

Answer:

Watch Video Solution

3. Which of the following is the correct order of repulsive interaction of lone pair(lp) and bond pair (bp) of electrons?

A. lp - lp $>$ lp -bp $>$ bp - bp

B. lp - bp $>$ lp - lp $>$ bp - bp

C. bp - bp $>$ lp - lp $>$ lp -bp

D. lp -lp $>$ bp - bp- $>$ lp - bp

Answer:

Watch Video Solution

4. The cause of spherical shape of water drops is-

A. viscosity

B. surface tension

C. hydrogen bond

D. high critical temperature of H_2O vapour.

Answer:

Watch Video Solution

5. An amount of work w is done by a system and q amount of heat is supplied to the system. By which of the following relation the change in internal energy of the system can be expressed?-

A. $\Delta U = q - w$

B. $\Delta U = q + w$

C. $\Delta U = q$

D. $\Delta U = w - q$

Answer:

Watch Video Solution

6. Which one of the following indicates a spontameous process?-

A. $\Delta G = O$

B. $\Delta H = T\Delta S$

C. $\Delta G > O$

D. $\Delta G < O$

Answer:

Watch Video Solution

7. Establish the relation between K_p and K_c for the reaction $2SO_2(g) + O_2(g) \Leftrightarrow 2SO_3(g)$

A. $K_p = K_c$

B. $Kp = Kc(RT)^{-1}$

C. Kp = KcRT

D. $Kp = Kc(RT)^2$.

Answer:

Watch Video Solution

8. Which one of the following elemants shows diagonal relation-ship with magnesium?-

A. Na

B. Li

C. Be

D. Ca

Answer:

Watch Video Solution

9. Sodium is preserved in which of the following liquids?-

A. Water

B. Ethanol

C. Kerosene oil

D. Methanol

Answer:

Watch Video Solution

10. Which of the following is a carbanion?-

A. CH_3O^-

B. $CH_3CH_2^-$

C. CH_3COO^-

D. $C_6H_5O^-$

Answer:

Watch Video Solution

11. In the Lassaigne test for the detec-tion of nitrogen in an organic compound, with which of the following metals the organic compound is fusde?-

A. Li

B. Mg

C. Na

D. Zn.

Answer:

Watch Video Solution

12. Which of the following compounds does not produce a white precipitate on treatment with ammonicacal silver nitrate solution?-

A. Acetylene

B. Methyl acetylaene

C. Ethyl acetylene

D. Dimethyl acetylene.

Answer:

Watch Video Solution

13. In which of the following reaction the product is not formed according to Markownikonikoff' rule?-

A. $CH_3CH = CH_2 + HCl \rightarrow$

B. $CH_3CH_{=}CH^2 + HCI \xrightarrow{peroxide}$

C. $CH_3CH = CH_2 + HBr \rightarrow$

D. $CH_3CH = CH_2 + HBr \xrightarrow{peroxide}$

Answer:

Watch Video Solution

14. Which of the following gases emitted by motor vehicles is responsible for the formation of photochemical smog?-

A. `SO_2

B. CO

C. NO

D. CO_2.

Answer:

Watch Video Solution

15. The empirical formula of an organic compound is CH_2O and its moleclar weight is 180. What is the molecular formula of the compound? (H = 1, C = 12, O = 16)

Watch Video Solution

16. Arrange the following elements in the increasing order of their first ionisation enthalpy : Li, Be, Na, Mg.

Watch Video Solution

17. Arrange the following elements in the decreasing order of their electronegativity : Si, N, F, Cl .

Watch Video Solution

18. What is meant by an isolated system in thermodynamics?

Watch Video Solution

19. Write the SI unit of entropy.

Watch Video Solution

20. What reagent can be used for the following conversation ?

$HC = CH \rightarrow H_2C = CH_2$.

Watch Video Solution

21. How many neutrons are present in 5×10^{-1} moles of `^14_6C?

Watch Video Solution

22. Determine the mass percentage composition of water (H=1. o=16).

Watch Video Solution

23. Mention Heiscenberg's uncertainly principle. Calculate the uncertainty of velocity of an electron which have an uncertainty in position of lA.

Watch Video Solution

24. Explain why $\mathbb{C}l_4$ is not hydrolysed while $SiCl_4$ is hydroglysed

Watch Video Solution

25. Why is the aqueos solution of borax alkaline?

Watch Video Solution

26. Which reagent is called anmelectrophile in organic reation? write with an example.

Watch Video Solution

27. Write the IUPAC names of the compounds $CH_2 = CHCH_2CH_2C = CH$ and $CH_3CH = CHCH_2C = CH$.

Watch Video Solution

28. Mention two causes of soil pollution .

Watch Video Solution

29. How does the increase in the amount of CO_2 in the atmosphere lead to global warming ?

Watch Video Solution

30. Write with an example the condition for two atoms tom be considered as isobars .

Watch Video Solution

31. ${}_{26}Fe^{3+}$ is more stable than Fe^{2+}. Explain why? Which is more paramagnetic?

Watch Video Solution

32. What are the quantum numbers by which an electron in an atom can be designed?

Watch Video Solution

33. What is the maximum number of quantum number that may be the same for two electerons of an atom ?

Watch Video Solution

34. The outermost electrons configuration of the atom of an elements is $3s^2 3p^3$. Mention the position of the elements in the long periodic table.

Watch Video Solution

35. Why is the electron gain enthalpy of oxygen is less than that of sulphur?

Watch Video Solution

36. O_2 is paramagnetic, why?

Watch Video Solution

37. Write the resonance structure of CO_3^{2-} ion.

Watch Video Solution

38. Why is boiling point of H_2O grater than that of H_2S?

Watch Video Solution

39. State Gay Lussac's law related to pressure and temperature of a gas. 3.2g of sulphur when vaproised the sulphur vapour occupies a volume of 280.2 mL at STP . Determine the molecular formula of sulphur vapour under this condition . (S = 32)

Watch Video Solution

40. Determine the volume of $2 \cdot 2$ g of caabon dioxide at $27^{\circ} C$ and 570 mm Hg pressur .

Watch Video Solution

41. Write Hess's law.

Watch Video Solution

42. For the following reaction at 298K

$2X + Y \rightarrow Z$

ΔH = 300 kj mol(-1) and ΔS = 0.2 kj K^{-1}mol^(-1) At what tempreature will the reaction become spontaneous considering ΔH and `DeltaS to be constnt over the temperature range?

Watch Video Solution

43. What is the oxidation number of Mn in K_2MnO_4?

Watch Video Solution

44. Balance the following chemical equation by ion by ion election method:

$Cr_2O_7^{2-} + Fe^{2+} + H_2 \rightarrow Cr^{3+} + Fe^{3+} + H_2O.$

Watch Video Solution

45. Balance the following chemical equation by ion by oxidation number of method : $NaNO_3 + Zn + NaOH \rightarrow NH_3 + Na_2ZnO_2 + H_2O$.

Watch Video Solution

46. What is the oxidation number of S in S_8?

Watch Video Solution

47. What is heavy water ?

Watch Video Solution

48. With balanced chemichal equation , give an example of reducing property of H _ $2O_2$.

Watch Video Solution

49. Show two canonicals of benzene by drawing . Benzene is stored in a bottle . Is there existence of the two canonicals in benzene of the bottle ? Answer with reason.

Watch Video Solution

50. Between $(CH_3)_3 - C - Cl$and $CH_3 - Cl$ which compound undegoes heterolystic fission readily in water? Why?

Watch Video Solution

51. State law of mass action.

Watch Video Solution

52. What is Buffer solution.

Watch Video Solution

53. If the concentration of ammonia and ammonium chloride in buffer solution of ammonia - ammonium chloride are 0.2 M and 0.3M respectively, deteimine the pH of the buffer solution. (Given $K_b(NH_3)$ = 1.76 x 10^{-5}

Watch Video Solution

54. Determine the pH of 0.1 M acetic acid solution. (pKa of acetic acid is 4.75) Is there any OH^-ion present in this solution of acetic acid? Answer with reason.

Watch Video Solution

55. Why does rate of dissociation of H _ $2S$ in equeous solutin decrease in the presence of HCL?

Watch Video Solution

56. Why is carbone monoxide toxic?

Watch Video Solution

57. Write with balanced chemical equation . what happens when aluminium is heated with concentrated aquous solution of cautstic potash.

Watch Video Solution

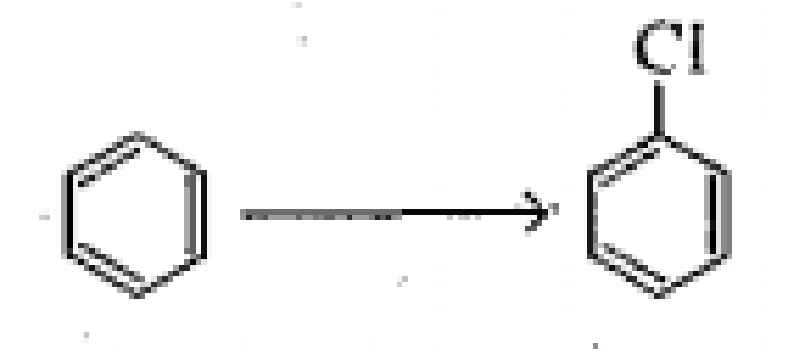
58. Write one use each of Silicones and Aplite.

Watch Video Solution

59. Two isomeric compounds A and B having the molecular formula $C_3H_7B_r$ form the same compound C on dehydrobromination. C on ozonolysis produces acetaldehyde and formaldehyde. Identify A. B and C.

Watch Video Solution

60. How would you convert?



Watch Video Solution

61. Write the mechanisum of the following reaction :

$$CH_4 + Cl_2 \xrightarrow[Sunlight]{Diffused} CH_3Cl + HCl$$

Watch Video Solution