CHEMISTRY

BOOKS - OSWAAL PUBLICATION

Solved Paper 2018-2

Exercise

1. Express 0.00035 in scientific notation.

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2. State an example of heterogeneous equilibrium

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3. Write the IUPASC name of the element with atomic number 104.

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4. What is the oxidation number of Mn is MnO_4^- ?

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5. Which alkali metal is the strongest reducing agent?

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6. What is the composition of producer gas?

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7. Name the allotropic form of carbon whose structure resembles soccer ball.

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8. Write the bond line structure of

$HC = C - CH = CH_2$

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9. Complete the following equation

$3CH = CH \xrightarrow[\text{Iron tube 873K}]{\text{red hot}}$ .....

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10. Mention two postulates of Dalton's atomic theory?

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11. Give the expression for

Van der Waal's equation for n moles of a gas

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12. Give the expression for

Compressibility factor (z)

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13. Write the lewis dot structure for (i) CO_2 (ii) CH_4

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14. Given any two anomalour behaviour of Beryllium.

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15. How to prepare diborane in laboratory ?

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16. State Markownikoff's Rule.

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17. Write the Newman's projections of ethane.

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18. How is Ozone layer formed in the stratosphere? Name a chief chemical that causes its depletion.

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19. What are Iso-electronic species? Arrange the following in the increasing order of their ionic radius N^{-3}, Mg^{+2}, Na^{+} and O^{-2}.

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20. Explain the structure of methane moleculeon the basis of hybridisation.

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21. Define hydrogen bond. Give an example for the molecule having Intramolecular hydrogen bond.

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22. Define hydrogen bond. Give an example for the molecule having Intramolecular hydrogen bond.

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23. Write any three postulates of Molecular orbital theory.

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24. Balance the following redox reaction by using Oxidation number method in acidic medium.

$Cr_2O_7^{-2}(aq) + SO_3^{-}2(aq) \rightarrow Cr^{+}3(aq) + SO_4^{-2}(aq)$

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25. Define ionic hydrides.

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26. Write any two uses of heavy water.

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27. Give the chemical equation involved in the preparation of sodium carbonate by Solvay process.

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28. Complete the following equation.:

$SiO_2 + 4HF \rightarrow ? + 2H_2O$

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

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30. Complete the following equation.:

$ZnO + CO \rightarrow \ ? \ + CO_2$

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31. A compound contains 4.07% hydrogen, 24.27% Carbon and 71.65%, Chlorine. Its molar mass is 98.96. Calculate is Empiricla and Molecular formulae.

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32. Define molarity of a solution.

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33. Write any three postulates of Rutherford's nuclear model of an atom.

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34. Calculate the energy of one mole of photon of radiation whose frequency is $5 \times 10^{14} Hz$(Given $h = 6.626 \times 10^{-34} Js$).

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35. State Pauli's exclusion principle.

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36. State: Hund's rule

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37. State Heisenberg’s uncertainty principle.

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38. Describe the orbital with following quantum nuber using s,p,d or f notations.: when n=2,l=0

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39. Describe the orbital with following quantum nuber using s,p,d or f notations.: when n=4,l=2

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40. Write any four postulates of kinetic theory of gases

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41. Define criticial temperature (T_e)

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42. Enthalpy of combustion of benzene is $-3267kJmol^{-1}$. Calculate enthalpy of formation of benzene, given enthalpy of formation of CO_2 and water are $-393.5kJmol^{-1}$ and $-285.83kJmol^{-1}$.

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43. What is an intensive property? Give an example.

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44. What is a spontaneous process? Write the criteria for spontaneity of a process in terms of ΔG.

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45. Find out the value of equilibrium constant for the following reaction at 298 K.

$2NH3(g) + CO_2(g) \leftrightarrow NH_2CONH_2(aq) + H(O)(I)$

Standards Gibbs energy change ΔG° at the given temperature is-13.6 kJ mol^(-1).

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46. What is chemical equilibrium? Write Kp and Kc for the reaction.

$N_{2(g)} + 3H_{2(g)} \Leftrightarrow NH_{3(g)}$

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47. Explain Lewis acid base concept with an example.

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48. What do you mean by buffer solution?

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49. State Le-Chatelier's priciple.

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50. Mention the conjugate base of H_2SO_4

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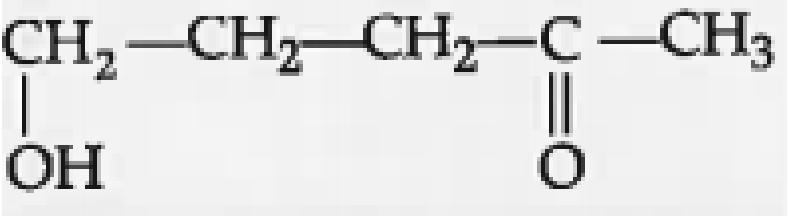
51. Mention the IUPAC name of the following compound



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52. What is postion isomerism?Given an example.

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53. Write the chemical equations when sodium fusion extract is prepared from an organic

compound containing nitrogen and sulphur.

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54. Give two differences between inductive effect and electromeric effect.

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55. Give the principle and the formula involved in the estimation of sulphur by carius method.

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56. How is ethene prepared from bromoethane?

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57. Explain the mechanism of nitration of benzene .

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