CHEMISTRY

BOOKS - MODERN PUBLICATION

MOCK TEST 01

Exercise

1. How does temperature influence the conductivity of a semi-conductor?

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2. Why are carbohydrates generally optically active ?

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3. Give one example of an artificial sweetener used by diabetic patients.

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4. Write the structure of 4-methylpent-3-en-2-one.

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5. Which part of the mustard plant we eat?

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6. An element E crystallizes in boyd centred cubic structure. If the edge lengh of the cell is $1.469 \times 10^{-10} m$ and the denstiy is $19.3 g cm^{-3}$, calculate the atomic mass of this element. Also calculate the radius of an atom of the element.

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7. Explain the following statement- Tiger only eats meat.

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8. What is the charge on the colloidal particles in the following : Colloidal sol of silver ?

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9. A colloidal solution of AgI is prepared by the following two methods : (a) Adding $AgNO_3$ to KI (aq)

solution (b) Adding KI to $AgNO_3$ (aq) solution. Give reasons for the origin of charges.

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10. Complete the reactions : $Mg_3N_2 + H_2O \rightarrow$

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11. Complete the reactions : $PCl_3 + H_2O \rightarrow$

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12. Which part of the brinjal plant we eat?

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13. Which part of the potato plant we eat?

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14. Explain the following statement- Deer only eat plants and plants products.

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15. Complete and name the following reactions :

$RCONH_2 + Br_2 + 4NaOH \rightarrow$

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16. Why is phenol acidic than ethanol? .

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17. Give chemical test to distinguish between the following : 1-Propanol and 2-propanol

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18. Give chemical test to distinguish between the following : Phenol and cyclohexanol.

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19. Why do primary amines have higher boiling point than tertiary amines?

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20. Give possible explanation that aliphatic amines are stronger bases than ammonia.

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21. Explain the following statement- Milk is an animal product.

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22. Explain the following statement- Some animals are reared for various purposes.

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23. The following chemical Feaction is occurring in an electrochemical cell.

$Mg(s) + 2Ag^+(0.0001M) \rightarrow Mg^{2+}(0.10M) + 2Ag(s)$

The E° electrode values are $Mg^{2+}/Mg = -2.36V$

$Ag^+/Ag = 0.81V$ For this cell, calculate/write : Cell potential E_{cell} .

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The E° electrode values are $Mg^{2+}/Mg = -2.36V$

$Ag^+/Ag = 0.81V$ For this cell, calculate/write : (i)Symbolic representation of the above cell. (ii) Will the above cell reaction be spontaneous?

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25. Why is the reduction of a metal oxide easier if the metal formed is in liquid state at the temperature of reduction?

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26. Account for the following facts : The reduction of Cr_2O_3 with Al is thermodynamically feasible, yet it does not occur at room temperature.

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27. Why is pine oil used in froth floatation method?

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28. Explain the following : H_3PO_2 and H_3PO_3 act as good reducing agent while H_3PO_4 does not.

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29. All the five bonds in PCl_5 are not equivalent justify.

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30. Express 929 in roman numbers.

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31. Explain- Cows, buffaloes, goats are reared for -

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32. Express 928 in roman numbers.

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33. For an elementary reaction : $2A + B \rightarrow 3C$ the rate of appearance of C at time 't' is $1.3 \times 10^{-4} moll^{-1}s^{-1}$. Calculate at this time : rate of disappearance of A.

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34. Aqueous copper sulphate solution (blue in colour) gives : (i) a green Precipitate with aqueous potassium fluoride and (ii) a bright green solution with aqueous potassium chloride. Explain these expeimental results.

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35. Explain- Fish, pigs, Chicken are reared for-

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36. Which will have a higher boiling point? 1-Chloro ethane or 2-methyl-2-chlorobutane . Give reasons.

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37. Explain- Sheep are reared for-

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38. Complete the following statement- The three products provided by animals are-

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39. Draw the pyranose structure of $\alpha - D - glu\cos e$.

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40. Complete the following statement- Three products provided by plants are-

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41. Complete the following statement- Examples of kharif crops are-

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42. Give appropriate reason for the given statement- We should eat cooked food.

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43. Give a brief information about the following term- Bronze.

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44. What are thermosetting and thermoplastic polymers ? Give one example of each.

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45. The monomers of Buna-S are

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46. Draw structure of BrF_3.

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47. Draw the structures of the following: $(HPO_3)_3$

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48. PCl_5 exists as $[PCl_4]^+[PCl_6]^-$ but PBr_5 exists as $[PBr_4]^+[Br]^-$. Explain.

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49. Explain the following statements- Alloys are made up of mixture of two or more than two metals or non-

metals or elements combined in definite proportions.

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50. Answer the following question- Is bronze alloy a mixture?

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51. Answer the following question- Is brass alloy a mixture?

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52. An organic compound A with molecular formula C_8H_8O gives positive DNP and iodoform tests. It does not reduce Tollen's or Fehling's reagent and does not decolourise bromine water also. On oxidation with chromic acid (H_2CrO_4), it gives a carboxy acid (B) with molecular formula $C_7H_6O_2$. Deduce the structure of A and B.

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53. Complete the following reactions by identifying A :

$$A + H_2(g) \xrightarrow{Pd\,/\,BaSO_4} (CH_3)_2CH - CHO$$

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54. Complete the following reactions by identifying A, B and C :

$$CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - \underset{\underset{O}{||}}{C} - CH_3 + NaOI \rightarrow B + C$$

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55. Derive the relationship between relative lowering in vapour pressure and mole fraction of the Volatile liquid .

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56. Complete the following statement- Lithopone is composed of-

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57. Heptane and octane form ideal solution . At 373K , the vapour pressure of the two liquid components are 105.2k Pa and 46.8k Pa respectively. What will be th vapour pressure of a mixture of 26.0g of heptane and 35.0g of octane?

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58. Heptane and octane form an ideal solution at 373 K, the vapour pressures of the pure liquids at this temperature are 105.2 kPa and 46.8 kPa respectively. If the solution contains 25 g of heptane and 28.5 g of octane, calculate. mole fraction of octane in the vapour phase.

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59. Which aqueous solution has higher concentration : 1 molar or 1 molal solution of the same solute. Give reasons.

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60. Express 948 in roman numbers.

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61. $KMnO_4$ is not acidified by HCl instead of H_2SO_4 because

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62. Give examples and suggest reasons for the following features of the transition metal chemistiy:

The highest oxidation state is exhibited in oxoanions of a metal.

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63. Give reasons : Ce^{4+} is used as an oxidizing agent in volumetric analysis.

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64. Transition metals form number of interstitial compounds. Explain.

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65. Zn^{2+} salts are white while Cu^{2+} salts are blue, explain why ?

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66. Compare the chemistry of actinides with that of the lanthanoids with special reference to electronic Configuration.

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67. Compare the chemistry of actinides with that of Lanthanides with special reference to oxidation state

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68. Compare the chemistry of actinides with that of the lanthanides with special reference to atomic and ionic sizes.

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69. Why Cr^{2+} is strongly reducing while Mn^{3+} is strongly oxidising ?

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70. How would you account for the following: Cobalt(II) is stable in aqueous solution but in the presence of complexing reagents it is easily oxidised.

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