

CHEMISTRY

BOOKS - SHARAM PUBLICATION

SET 17

Exercise

1. A transition metal ion has electronic configuration $[Ar]3d^7$ in its dipositive oxidation state. Its atomic number is

A. 25

B. 30

C. 27

D. 28

Answer:



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2. Benzylchloride can be prepared from toluene by reacting with :

A. HCl

B. SO_2Cl_2

C. $SOCl_2$

D. $Cl_2 \setminus h\nu$

Answer:



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3. which One of the following is a cross-linked polymer

A. Bakelite

B. Glycogen

C. Polythene

D. Nylon

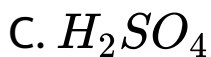
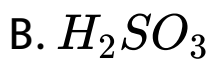
Answer:



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4. Which is the strongest acid in the following ?

A. $HClO_4$



Answer:



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5. Acid hydrolysis of ethyl acetate is

A. second order reaction

B. First order reaction

C. Zero order reaction

D. Third order reaction

Answer:



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6. Methyl - Ketone is identified by the reagent :

A. Tollen's reagent

B. Schiff's reagents

C. $\frac{I_2}{N} \alpha OH$

D. Fehling solution

Answer:



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7. Acetyl chloride cannot be obtained by the reaction of acetic acid with

A. PCl_5

B. Cl_2

C. $SOCl_2$

D. PCl_3

Answer:



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8. What metals are present in bronze ?



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9. Write the electronic configuration of Xenon.



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10. Between phenol and Phenoxide ion, which one is more stable?



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11. Which halogen shows only one oxidation state ?



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12. Write the relation between decrease in free energy and equilibrium constant of a cell reaction.



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13. Write the name of the monomers used in the synthesis of Dacron.



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14. how many atoms are present per unit cell of a body centred cubic crystal ?



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15. Explain why $CuSO_4$ solution cannot be stored in Zn vessel ?



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16. Why is H_2O liquid and H_2S a gas ?



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17. Why are most of the ions transition elements coloured?



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18. What is chelating ligand ?



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19. Write the chemical test to distinguish between formic acid and acetic acid.



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20. How does acetone react with $NaHSO_3$ oxide?



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21. What causes Brownian movement in colloidal solution ?



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22. What is the effect of temperature on the rate constant of a reaction ?



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23. Calculate the total number of voids present in the unit cell of a hexagonal close packing crystal.



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24. What is difference between antiseptic and disinfectants ?



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25. What is a zero order reaction? Derive an expression for the rate constant of a zero order reaction.



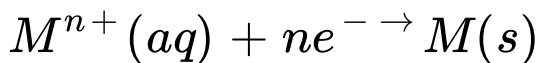
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26. Why phenol is acidic in nature ?



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27. Derive the Nernst equation for the electrode potential of the electrode



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28. A compound (A) having molecular formula $C_3H_7NO_2$ reacts with Sn and Conc.HCl to give compound (B). Compound (B) reacts with solid $NaNO_2$ and dil HCl at 273K to give compound C, which on treatment with $SOCl_2$ gives

compound (D). Write the structure of the compound A, B, C & D.



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29. Equivalent conductance at infinite dilution of NH_4Cl , NaOH and NaCl are 129.8, 217.4 and 108.45 mho cm^2 gm equivalent⁻¹ respectively. Calculate the equivalent conductance of NH_4OH at infinite dilution.



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30. Suggest a chemical test to distinguish between pentan-2-one and pentan-3-one. Which of these will respond to iodoform test and why?



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31. What is Fehling's test? Explain with example.



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32. What are electronic configuration of Group 18 elements of this group.



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33. Define the following terms:

Leaching



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34. Define the following terms:

Flux



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35. Define the following terms:

Ore.



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36. Write the salient features of valence bond theory.



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37. $[NiCl_4]^{2-}$ is paramagnetic and tetrahedral- Explain on the basis of VBT.



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38. What do you mean by a bidentate ligand?



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39. Discuss the factors affecting the solubility of a gas in liquid.





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40. Calculate the molarity and normality of a solution containing 9.8g of H_2SO_4 in 250 cm^3 of the solution.



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41. Give a method of preparation of chlorobenzene by Sandmeyer's reaction.



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42. Why are aryl halides less reactive towards nucleophilic substitution reaction than alkylhalides?



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43. What happens when chlorobenzene is treated with Acetyl chloride in presence of anhydrous $AlCl_3$



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44. What happens when chlorobenzene is treated with

Metallic sodium



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45. What is the difference between order and molecularity of a reaction ?



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46. hydrolysis of ethyl acetate in presence of dil.HCl produces ethyl alcohol and acetic acid.

What is the order of this reaction? The time required for 99.9% hydrolysis of ethyl acetate is 10 times the time required for 50 % hydrolysis of this ester. Justfy.



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47. How will you prepare acetone from Isopropyl alcohol



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48. How can acetone be prepared from- acetic acid



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49. What happens when acetone reacts with :
HCN



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50. What happens when acetone reacts with CH_3MgBr followed by hydrolysis by mineral acids.



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