



CHEMISTRY

BOOKS - R G PUBLICATION

SAMPLE PAPERS

Exercise

1. The available space occupied by spheres of equal size in three dimensions in both hcp and ccp arrangement is

A. 74 %

B. 70 %

C. 68 %

D. 60.4 %

Answer:



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2. A cell is formed by two electrodes Cu & Ag.

Write the cell representation.



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3. What is an Ellingham diagram?

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4. What will happen when methylene blue is adsorbed on charcoal?

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5. In the solid phase of phosphorus penta chlo-ride the structure of cation part is & anion part is.



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6. Iodine can not be used for electro philic substitution of arene. Why?



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7. Give one example of step growth polymerisation.



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8. Calculate Van't Hoff factor 'i' for 0.001 molal NaCl solution.



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9. What is limiting molar conductivity? Discuss the variation of molar conductivity of a strong electrolyte with concentration.



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10. Write the full cell reaction taking place in Laclanche cell.



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11. What is hydro metallurgy? How Cu is extracted by this method.



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12. Knowing the electron gain enthalpy values for $O \rightarrow O^-$ and $O \rightarrow O^{2-}$ as -141 and 702 kJ mol^{-1} respectively, how can you account for the formation of a large number of oxides having O^{2-} species and not O^- ?



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13. How are XeO_3 and $XeOF_4$ prepared?



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14. Arrange the following in the order of property indicated:

NH_3 , PH_3 , AsH_3 , SbH_3 , BiH_3



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15. Explain briefly how +2 state becomes more and more stable in the first half of the first row transition elements with increasing atomic number?



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16. Mention two factors that effect the rate of a chemical reaction.



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17. Write the monomer units, structure and two uses of the following polymer

(i) Buna S rubber.

(ii) PAN



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18. Comment on the nature of S-O bonds formed in SO_2 molecule. Are these bond lengths equal in the molecule?



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19. Write three important characteristics of enzyme catalytic reaction.



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20. What happens when: Ferric chloride reacts with NH_4OH



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21. Why the solubility of alkyl halide in water is very low?



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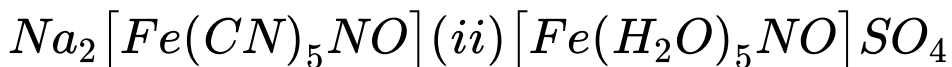
22. Drawing the various resonating structures. Show that nitrobenzene activate the ortho & para position of the benzene ring for nucleophilic substitution reaction.



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23. Write IUPAC name of the following :

(i)



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24. On the basis of valence band theory explain the structure of $[Co(NH_3)_6]^{3+}$ ion.



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25. Define broad spectrum, narrow spectur, anti-biotics. Classify the following drugs in accor-dance with above types of antibiotics. Erythromycin, dysidazirine, chloramphenicol, ofloxacin, ampicillin, penicillin G.



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26. What is meant by 'Exchange energy"? How this energy affect the ionisation energy especially for chromium and zinc?





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27. 2-methyl-2-methoxy propane gives 2-iodo 2-methyl propane when treated with the HI but anisole produces phenol on the same treatment, Explain.



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28. Show how would you synthesis alcohols from appropriate alkenes?



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29. How 1° , 2° and 3° amine react with Hinsberg's reagent ? Show the reactions.



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30. Define 'native protein'. What will happen if it is subjected to very high temperature?



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31. How will bring about following conversions? (any five)

(i) Acetone to ethylene glycol ketal.

(ii) p-fluorotoluene to p-fluoro benzaldehyde

(iii) Propanoyl chloride to bute-2 one).

(iv) 3-Nitrobromobenzene to 3-nitro benzoic acid.

(v) Benzaldehyde to α -hydroxy phenylacetic acid.

(v) Benzaldehyde to α -hydroxy phenylacetic acid.

(vi) Benzene 1,2 dioic acid to phthalimide.



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32. A Ketone 'A' Which undergoes haloform reaction gives compound B on reduction. B on heating with H_2SO_4 gives compound C, which forms mono-ozonide D. D on hydrolysis in presence of Zn dust gives only acetaldehyde. Identify A, B and C. Write down the reactions involved.



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