



CHEMISTRY

BOOKS - SHARAM PUBLICATION

2013 QUESTION PAPER

Exercise

1. If ΔG for a reaction is negative , the change is

A. spontaneous

B. reversible

C. irreversible

D. non - spontaneous

Answer:



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2. What will be the amount of

I^{128} ($t_{1/2} = 25$ min) left after 50 min?

A. one - half

B. one - fourth

C. one - third

D. one - eighth

Answer:



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3. The enthalpies of all elements in their standard state are :

A. one

B. different for all

C. zero

D. less than zero

Answer:



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4. The solution of a colourless salt in water has a pH value of = 9. The salt would be :

A. NaNO_3

B. NaOCOCH_3

C. $\text{CH}_3\text{COONH}_4$

D. NaCl

Answer:



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5. Uranium (mass number 238 and atomic number 92) emits an alpha particle. The

product has mass number and atomic number
respectively as :

A. 238 and 96

B. 238 and 90

C. 234 and 90

D. 236 and 92

Answer:



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6. H_2S is passed through an acidified solution of copper sulphate and a black precipitate is formed. This is due to :

A. oxidation of Cu^{+2}

B. reduction of Cu^{+2}

C. oxidation of Cu^{+2} and then reduction

D. Neither oxidation nor reduction of
 Cu^{+2}

Answer:





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7. When a solution of formaldehyde and KOH is heated, it will give :

- A. acetylene and methane
- B. methanol and potassium formate
- C. methanol and methane
- D. acetylene and methanol

Answer:



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8. Alkaline hydrolysis of an ester is called

A. Neutralisation

B. Esterification

C. Polymerisation

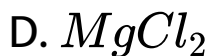
D. Saponification

Answer:



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9. Which of the following chemicals liberates bromine from a solution of KBr?

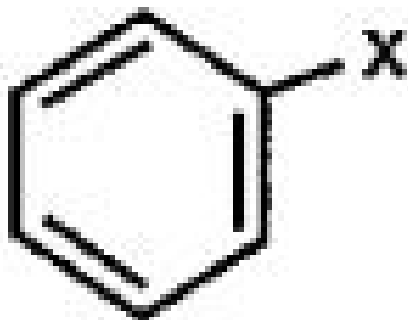


Answer:



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10. In the electrophilic substitution of the compound shown below more than 80% of the meta - isomer was obtained as the major product. So the substituent 'X' shown in the compound is :



A. - Br

B. - OH

C. $-CHO$

D. $-NH_2$

Answer:



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11. The free energy change for a reversible reaction at equilibrium is:



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12. What is the relation between K_p and K_c for the following reaction ?



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13. Wrought iron is the purest form of iron. Write a reaction used for the preparation of wrought iron from cast iron. How can the impurities of sulphur, silicon and phosphorus be removed from cast iron?





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14. Give the name of monomers used in buna-S rubber preparation.



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15. Name the main product obtained by the carbylamine reaction of $CH_3 - CH_2 - NH_2$



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16. Fill in the blanks : An equimolar mixture of NH_4Cl and NH_4OH is a



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17. The cations on reaching gain electrons and from neutral atoms , which get on the cathode.



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18. $R - CH_2 - CN$ on reduction with H_2 / Ni forms....



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19. Fill in the blanks : Benzene reacts with ozone to form a triozone which on hydrolysis gives 3 moles of



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20. Phenol is acidic because ___ is more stable than ___



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21. What is endothermic reaction. Give example.



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22. State the Law of mass action and explain any two significance of equilibrium constant.



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23. What happens when HCl gas is passed through the concentrated solution of $NaCl$?
Give reasons for the answer.



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24. Predict whether we can store $CuSO_4$ solution in a zinc vessel from the following data. Show your calculation.

$$E_{Zn^{2+} / Zn}^{\circ} = 0.76V$$

$$E_{Cu^{2+} / Cu}^{\circ} = 0.34V$$



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25. What happens when SO_2 gas is passed through lime water first slowly and then in excess ?





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26. How are the natures of radiations from radio - active substances detected under the influence of electric and magnetic field.



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27. HF is a liquid whereas HCl is a gas. Explain.



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28. Explain why most of transition elements form coloured salts.



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29. How does Tollens reagent react with formic acid ? Explain with equation.



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30. How will you convert aniline to chlorobenzene ?



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31. What are rodenticides ? Give the example of a commercial compound.



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32. Elucidate the differences between soaps and detergents.



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33. What is Buffer solution ? Write Hendersen's equation for calculation of the pH of a basic buffer.



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34. Give a brief account of Werner's coordination theory.



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35. Explain. Why fluorine exhibits an oxidation state of -1 only, while other elements of the family exhibit oxidation state of -1 +1, +3, +5 and +7.



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36. What are the criteria of aromaticity in a compound ?



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37. Write a note on green house effects with an emphasis on causes.



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38. What is molecularity ? Illustrate with examples.



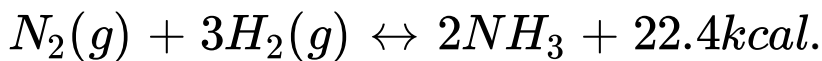
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39. Derive the rate constant expression for the reaction $A \rightarrow B + C$.



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40. State Le Chatelier principle and explain its application to the following reaction at equilibrium :



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41. What is the value of pH of $0.01MNaOH$ solution ?



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42. Give the principle of manufacture of H_2SO_4 by contact process.



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43. What is Nuclear fusion ? Explain with examples.



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44. Write the main characteristics of transitional elements.



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45. Why does Xe form fluorides and not chlorides ?



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46. Give any two methods for the preparation of aliphatic primary amine with equation.



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47. What happens when acetaldehyde reacts with iodine in $NaOH$ solution ? Give equation.



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48. What is antibiotic ? Give one example .



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49. Show the preparation of benzoic acid from toluene



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50. Show the preparation of benzoic acid from carboxylation of Grignard's reagent with equation.



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51. How will you convert ethylamine to methylamine ?



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52. What is Teflon ? Write two of its uses.



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