



CHEMISTRY

BOOKS - UNITED BOOK HOUSE

MODEL QUESTION PAPER 9

Exercise

1. The Correct set of four quantum numbers for an 3d electron—

A. 3, 3, 0, $\left(-\frac{1}{2}\right)$

B. $3, 2, -2, + \left(\frac{1}{2}\right)$

C. $3, -2, -1 + \left(\frac{1}{2}\right)$

D. $3, 1, -1, + \left(\frac{1}{2}\right)$

Answer:



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2. State of hybridisation of Cl atom in ClO_2

A. Sp^3d

B. Sp^3

C. Sp^3d^2

D. Sp

Answer:



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3. Change of bond angle with increase in 'S'

Character in hybrid orbital

A. Decreases

B. Increases

C. remain unaltered

D. Both 'a' & 'b'

Answer:



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4. Kinetic energy of 1 gm mole of gas

A. $2RT / 3$

B. $3RT / 2$

C. $RT / 2$

D. $2R / 3$

Answer:



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5. Which one is correct for internal energy—

A. It is partially kinetic and partially potential

B. Completely potential

C. all are true

D.

Answer:



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6. Which one is strongest acid

A. $Pka = 4$

B. $PKa = 3$

C. $pka = 2$

D. $pka = 1$

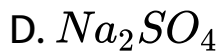
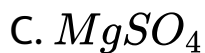
Answer:



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7. Epsom salt is—





Answer:



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8. Be is less abundant element as—

A. Be is radioactive

B. It transmute

C. Plant abosorbed at a very high quantity

D. none of'these

Answer:



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9. One dememrits of Freidel Crafts alykylaton reaction is—

- A. Very slow reaction
- B. Very fast reaction
- C. Poly alkylaton takes place
- D. Requires Catalyst

Answer:





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10. Tertiary carbocation is most stable because—

A. For induction of Methyl group

B. Hyper conjugation

C. Resonance

D. inductomcric effects

Answer:



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11. No of double bond equivalent of C_4H_{10} is—

A. 1

B. 2

C. 3

D. 4

Answer:



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12. Red precipitate formed in $Cu_2Cl_2 + NH_4OH$

soft when

A. C_2H_6 is passed

B. C_2H_4 is passed

C. C_2H_2 is passed

D. $CH(CH_3)_3$ is passed

Answer:



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13. Which one damages ozonosphere

A. N_2O

B. NO_2

C. SO_2

D. $CHCl_3$

Answer:

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14. What is atomic heat?

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15. State law of Constant proportion.

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16. What do you mean by Covalent radius?

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17. In which process, work is maximum?

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18. Which type of property internal energy is?

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19. Give an example of non-aromatic Compound.



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20. For Complete combustion of a gaseous hydrocarbon oxygen required is 6 times of its volume and CO_2 formed is four times of its volume find the formula of the hydrocarbon.



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21. State with example law of reciprocal proportion.



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22. Show that at most eight electrons can be accommodated in $n = 2$.



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23. State the electronic configuration of Ni^{2+} ion and find number of unpaired electrons in it.



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24. Give an example of an organic compound where all 1° , 2° , 3° & 4° Carbon atoms are present.

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25. Write IUPAC name:- $CH_3 - CH_2 - CHO$

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26. What is detergent? Name a pesticides that pollutes environment.

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27. What do you mean by TLV?

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28. What is the magnitude of n , l , m_l of 3d electron?

State Hund's rule.

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29. State two drawback of Bohr theory. In which case

Bohr theory is applicable.

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30. State the general electronic configuration of 'd' block element, state two characteristics of d - block element. State two characteristics of d-block element.

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31. What do you mean by inner transition metal?
What do you mean by lanthenoid contraction?

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32. Draw the Lewis dot structure of HCN , SO_3 , NH_4

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33. Calculate the surface tension of water when water rises a height of 14.9 cm in a capillary tube of diameter 0.2 mm.

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34. Find the partial pressure of N_2 in a mixture of 3 mole N_2 and 4 mole H_2 at $-27^\circ C$ having total

volume 4 liter.

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35. What is Boyle's temperature.

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36. ΔH° & ΔS° for the reaction
 $H_2(g) + I_2(g) = 2HI(g)$ are $16.23 \text{ KJ mol}^{-1}$ and
 63.8 kJ mol^{-1} predic whether the reaction be
spontaneous at 35° C .

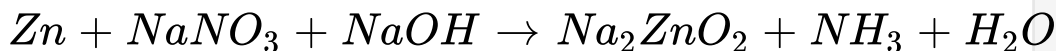
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37. What do you mean by enthalpy? Show that

$$\Delta H = \Delta U + \Delta nRT.$$

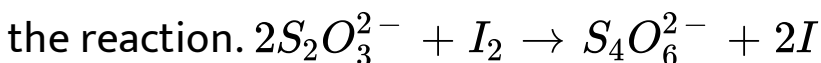
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38. Balance the equation by ion-electron method :



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39. Calculate the equivalent weight of $Na_2S_2O_3$ for





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40. Why syrapic H_3PO_4 is better Catalyst than H_2SO_4 for the dissociation of $2H_2O_2 \rightarrow 2H_2O + O_2$ What is Marshall acid?



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41. Be does not respond to flame test but Ba does explain. Which alkali metal is a strongest reducing agent?



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42. $CH_3CH_2C(CH_3)_2 - CH_2 - CH_3$, how many 1° . 2° & 3° Carbon atom present in it? Name a process by which quantity of N_2 in an organic compound can be estimated.

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43. Heat of reaction at constant pressure and volume is $3RT$. Find the relation between K_p & K_e for the reaction.

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44. Discuss the activity of acidic buffer. Calculate the pH of the solution when $100\text{ml } 0.2(N) \text{NH}_4\text{OH}$ and $50\text{ml } 0.01(N) \text{HCl}$ solution. P_{Kb} of NH_4OH is 4.7.



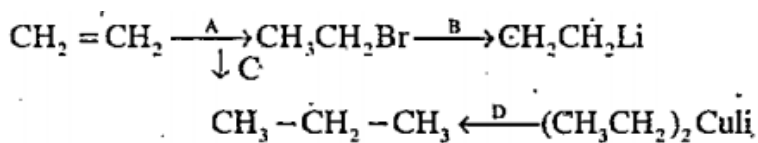
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45. Explain why melting and boiling point of Boron is too high. State two 'P' block elements which have a diagonal relationship. Why BF_3 acts as a Lewis acid?



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46. Identify A, B, C & D.



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47. What is hindered Catalyst?

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48. What is step up reaction? Give example. How would you separate Benzene from aniline?

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