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## CHEMISTRY

## BOOKS - CHHAYA CHEMISTRY (BENGALI ENGLISH)

## PREVIOUS YEAR QUESTION PAPER 2018

## Wbchse 2018 Section I

1. Which of the following is the ground state electronic configuration of Cr ?(Atomic number of Cr is 24)
A. $1 s^{2} 2 s^{2} 2 p^{6} 3 s^{2} 3 p^{6} 3 d^{4} 4 s^{2}$
B. $1 s^{2} 2 s^{2} 2 p^{6} 3 s^{2} 3 p^{6} 3 d^{5} 4 s^{1}$
C. $1 s^{2} 2 s^{2} 2 p^{6} 3 s^{2} 3 p^{6} 3 d^{6}$
D. $1 s^{2} 2 s^{2} 2 p^{6} 3 s^{2} 3 p^{6} 3 d^{3} 4 s^{2} 4 p^{1}$

## Answer:

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2. The state of hybridisation of the central atom of which of the following is $s p^{3} d^{2}$ ?
A. $S F_{4}$
B. $\mathrm{PCl}_{5}$
C. $S F_{6}$
D. $\mathrm{SO}_{4}^{2-}$

## Answer:

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3. Which of the following is the correct order of repulsive interaction of lone pair(lp) and bond pair (bp) of electrons?
A. $l p-l p>l p-b p>b p-b p$
B. $l p-b p>l p-l p>b p-b p$
C. $b p-b p>l p-l p>l p-b p$
D. $l p-l p>b p-b p>l p-b p$

## Answer:

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4. The cause of spherical shape of water drops is-
A. viscosity
B. surface tension
C. hydrogen bond
D. high critical temperature of $\mathrm{H}_{2} \mathrm{O}$ vapour

## Answer:

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5. An amount of work $w$ is done by a system and $q$ amount of heat is supplied to the system. By which of the following relations the change in internal energy of the system can be expressed ?
A. $\Delta H=q-w$
B. $\Delta U=q+w$
C. $\Delta U=q$
D. $\Delta U=w-q$

## Answer:

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6. Which one of the following indicates a spontameous process?-
A. $\Delta G=0$
B. $\Delta H=T \Delta S$
C. $\Delta G>0$
D. $\Delta G<0$

## Answer:

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7. The relation between $K_{p}$ and $K_{c}$ for the following reaction : $2 \mathrm{SO}_{2}(\mathrm{~g})+\mathrm{O}_{2}(\mathrm{~g}) \Leftrightarrow 2 \mathrm{SO}_{3}(\mathrm{~g})$ is -
A. $K_{p}=K_{c}$
B. $K_{p}=K_{c}(R T)^{-1}$
C. $K_{p}=K_{c} \times R T$
D. $K_{p}=K_{c}(R T)^{2}$

## Answer:

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8. Which one of the following elemants shows diagonal relation-
ship with magnesium?-
A. Na
B. Li
C. Be
D. Ca

## Answer:

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9. Sodium is preserved in which of the following liquids?-
A. Water
B. Ethanol
C. Kerosene oil
D. Methanol

## Answer:

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10. Which of the following is a carbanion ?
A. $C H_{3} P^{\Theta}$
B. $\mathrm{CH}_{3} \mathrm{CH}_{2}^{\Theta}$
C. $\mathrm{CH}_{3} \mathrm{COO}^{\Theta}$
D. $C_{6} H_{5} O^{\Theta}$

## Answer:

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11. In the Lassaigne test for the detec-tion of nitrogen in an organic compound, with which of the following metals the organic compound is fusde?-
A. Li
B. Mg
C. Na
D. Zn

## Answer:

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12. Which of the following compounds does not produce a white precipitate on treatment with ammonicacal silver nitrate solution?-
A. Acetylene
B. Methyl acetylene
C. Ethyl acetylene
D. Dimethyl acetylene

## Answer:

13. In which of the following reaction the product is not formed according to Markownikonikoff' rule?-
A. $\mathrm{CH}_{3} \mathrm{CH}=\mathrm{CH}_{2}+\mathrm{HCl}_{2} \rightarrow$
B. $\mathrm{CH}_{3} \mathrm{CH}=\mathrm{CH}_{2}+\mathrm{HCl} \xrightarrow{\text { Peroxide }}$
C. $\mathrm{CH}_{3} \mathrm{CH}=\mathrm{CH}_{2}+\mathrm{HBr} \rightarrow$
D. $\mathrm{CH}_{3} \mathrm{CH}=\mathrm{CH}_{2}+\mathrm{HBr} \xrightarrow{\text { Peroxide }}$

## Answer:

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14. Which of the following gases emitted by motor vehicles is responsible for the formation of photochemical smog ?
A. $S O_{2}$
B. $C O$
C. NO
D. $\mathrm{CO}_{2}$

## Answer:

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## Wbchse 2018 Section li

1. The empirical formula of an organic compound is $\mathrm{CH}_{2} \mathrm{O}$ and its moleclar weight is 180 . What is the molecular formula of the compound? $(\mathrm{H}=1, \mathrm{C}=12, \mathrm{O}=16)$
2. Arrange the following elements in the increasing order of their first ionisation enthalpy : $\mathrm{Li}, \mathrm{Be}, \mathrm{Na}, \mathrm{Mg}$.

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3. Arrange the following elements in the decreasing order of their electronegativity : Si, N, F, Cl .

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4. What is meant by an isolated system in thermodynamics?

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5. Write the SI unit of entropy.
6. What reagent can be used for the following conversation ?

$$
\mathrm{HC}=\mathrm{CH} \rightarrow \mathrm{H}_{2} \mathrm{C}=\mathrm{CH}_{2} .
$$

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7. How many neutrons are present in $5 \times 10^{-1}$ moles of ${ }^{\wedge} 14 \_6 \mathrm{C}$ ?

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8. Determine the mass percentage composition of water ( $\mathrm{H}=1$. $\mathrm{o}=16$ ).

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9. State Heisenberg uncertainty principle. What is the shape of $s$ orbital ?

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10. Explain why $\mathrm{SiCl}_{4}$ undergoes hydrolysis readily

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11. Why is the aqueos solution of borax alkaline?

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12. Which reagent is called anmelectrophile in organic reation? write with an example.
13. Write the IUPAC names of the compounds $\mathrm{CH}_{2}=\mathrm{CHCH}_{2} \mathrm{CH}_{2} \mathrm{C}=\mathrm{CH}$ and $\mathrm{CH}_{3} \mathrm{CH}=\mathrm{CHCH}_{2} \mathrm{C}=\mathrm{CH}$.

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14. Mention two causes of soil pollution .

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15. How does the increase in the amount of $\mathrm{CO}_{2}$ in the atmosphere lead to global warming ?

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16. Write with an example the condition for two atoms to be considered as isobars .

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17. ${ }_{26} F e^{3+}$ is more stable than $F e^{2+}$. Explain why? Which is more paramagnetic?

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18. What are the quantum numbers by which an electron in an atom can be designed?

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19. What is the maximum number of quantum numbers that may be the same for two electrons of an atom ?

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20. The outermost electrons configuration of the atom of an elements is $3 s^{2} 3 p^{3}$. Mention the position of the elements in the long periodic table.

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21. Why is the electron gain enthalpy of oxygen is less than that of sulphur?

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22. $O_{2}$ is paramagnetic, why?

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23. Draw the canonicals of $\mathrm{CO}_{3}^{2-}$

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24. Why is boiling point of $\mathrm{H}_{2} \mathrm{O}$ grater than that of $\mathrm{H}_{2} \mathrm{~S}$ ?

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25. State Gay Lussac's law related to pressure and temperature of
a gas. 3.2 g of sulphur when vaproised the sulphur vapour occupies a volume of 280.2 mL at STP. Determine the molecular formula of sulphur vapour under this condition. $(S=32)$

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26. Determine the volume of $2 \cdot 2 \mathrm{~g}$ of caabon dioxide at $27^{\circ} \mathrm{C}$ and 570 mm Hg pressur .

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27. Write Hess's law.

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28. For the following reaction at 298 K
$2 X+Y \rightarrow Z$
$\Delta H=300 \mathrm{kj} \mathrm{mol}(-1)$ and $\Delta S=0.2 \mathrm{kj} K^{-1} \mathrm{~mol}^{\wedge}(-1)$ At what
tempreature will the reaction become spontaneous considering
$\Delta H$ and 'DeltaS to be constnt over the temperature range?

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29. What is the oxidation number of Mn in $\mathrm{K}_{2} \mathrm{MnO}_{4}$ ?

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30. Balance the following chemical equation by ion-electron method:
$\mathrm{Cr}_{2} \mathrm{O}_{7}^{2-}+\mathrm{Fe}^{2+}+\mathrm{H}^{+} \rightarrow \mathrm{Cr}^{3+}+\mathrm{Fe}^{3+}+\mathrm{H}_{2} \mathrm{O}$

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31. Balance the following chemical equation by ion by oxidation number of method : $\mathrm{NaNO} \_3+\mathrm{Zn}+\mathrm{NaOH} \rightarrow \mathrm{NH}+3+\mathrm{Na}$ _ $2 Z N O$ _ $2+\mathrm{H}_{-} 2 O$.
32. What is the oxidation number of S in $S_{8}$ ?

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33. What is heavy water?

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34. With balanced chemichal equation, give an example of reducing property of $\mathrm{H}_{-} 2 \mathrm{O}_{2}$.
35. Show two canonicals of benzene by drawing . Benzene is stored in a bottle. Is there existence of the two canonicals in benzene of the bottle ? Answer with reason.

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36. Between $\left(\mathrm{CH}_{3}\right)_{3}-\mathrm{C}-\mathrm{Cl}$ and $\mathrm{CH}_{3}-\mathrm{Cl}$ which compound undegoes heterolystic fission readily in water? Why?

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37. State law of mass action.

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38. What is buffer solutio? Give one example of acidic buffer. In which case of acidic buffer $\mathrm{pH}=\mathrm{pKa}$.

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39. If the concentration of ammonia and ammonium chloride in a buffer solution of ammonia-ammonium chloride are 0.2 M and 0.3
$M$ respectively, determine the pH of the buffer solution.
(Given : $K_{p}\left(N H_{3}\right)=1.76 \times 10^{-5}$ )

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40. Determine the pH of 0.1 M acetic acid solution . ( $p K_{a}$ of acetic acid is 4.75) Is there any $\mathrm{OH}^{-}$ion present in this solution of acetic acid ? Answer with reason .
41. Why does dissociation rate $H_{2} S$ is decreased in presence of HCL in aqueous solutio?

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42. CO is more toxic than $\mathrm{CO}_{2}$ because

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43. Write with balanced chemical equation . what happens when aluminium is heated with concentrated aquous solution of cautstic potash.

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44. Write the mechanisum of the following reaction :
$\mathrm{CH}_{4}+\mathrm{Cl}_{2} \xrightarrow[\text { Sunlight }]{\text { Diffused }} \mathrm{CH}_{3} \mathrm{Cl}+\mathrm{HCl}$

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## Jee Main 2018

1. Total number of lone pair of electrons in $I_{3}^{-}$ion is -
A. 9
B. 12
C. 3
D. 6

## Answer:

2. Which of the following salts is the most basic in aqueous solution?
A. $\mathrm{FeCl}_{3}$
B. $\mathrm{Pb}\left(\mathrm{CH}_{3} \mathrm{COO}\right)_{2}$
C. $A l(C N)_{3}$
D. $\mathrm{CH}_{3} \mathrm{COOK}$

## Answer:

## D Watch Video Solution

3. An alkali is titrated against an acid with methyl orange as indicator, which of the following is a correct combination?
Base Acid
End point
A.
Weak Strong Yellow to pinkish red
B.
Base Acid End point
Strong
Strong
Pink to colourless
C.
Base Acid End point
Weak Strong Colourless to pink
D.
Base Acid End point
Strong Strong Pinkish red to yellow

## Answer:

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4. The ratio of mass percent of C and H of an organic compound $\left(C_{X} H_{Y} O_{Z}\right)$ is 6:1. If one molecule of the above compound $\left(C_{X} H_{Y} O_{Z}\right)$ contains half as much oxygen as required to burn one molecule of compound $C_{X} H_{Y}$ completely to $\mathrm{CO}_{2}$ and $\mathrm{H}_{2} \mathrm{O}$. The empirical formula of compound $C_{X} H_{Y} O_{Z}$ is -
B. $\mathrm{C}_{2} \mathrm{H}_{4} \mathrm{O}_{3}$
C. $C_{3} H_{6} O_{3}$
D. $\mathrm{C}_{2} \mathrm{H}_{4} \mathrm{O}$

## Answer:

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5. Hydrogen peroxide oxidises $\left[\mathrm{Fe}(\mathrm{CN})_{6}\right]^{4-}$ to $\left[\mathrm{Fe}(\mathrm{CN})_{6}\right]^{3-}$ in acidic medium but reduces $\left[\mathrm{Fe}(\mathrm{CN})_{6}\right]^{3-}$ to $\left[\mathrm{Fe}(\mathrm{CN})_{6}\right]^{4-}$ in alkaline medium . The other products formed are, respectively -
A. $\mathrm{H}_{2} \mathrm{O}$ and $\left(\mathrm{H}_{2} \mathrm{O}+\mathrm{O}_{2}\right)$
B. $\mathrm{H}_{2} \mathrm{O}$ and $\left(\mathrm{H}_{2} \mathrm{O}+\mathrm{OH}^{-}\right)$
C. $\left(\mathrm{H}_{2} \mathrm{O}+\mathrm{O}_{2}\right)$ and $\mathrm{H}_{2} \mathrm{O}$
D. $\left(\mathrm{H}_{2} \mathrm{O}+\mathrm{O}_{2}\right)$ and $\left(\mathrm{H}_{2} \mathrm{O}+\mathrm{OH}^{-}\right)$

## Answer:

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6. An aqueous solution contains an unknown concentration of $\mathrm{Ba}^{2+}$. When 50 mL of 1 M solution of $\mathrm{Na}_{2} \mathrm{SO}_{4}$ is added, $\mathrm{BaSO}_{4}$ just begins to precipitate. The final volume is 500 mL . The solubility product of $\mathrm{BaSO}_{4}$ is $1 \times 10^{-10}$. what is the original concentration of $\mathrm{Ba}^{2+}$ ?
A. $1.1 \times 10^{-9} M$
B. $1.0 \times 10^{-10} M$
C. $5 \times 10^{-9} M$
D. $2 \times 10^{-9} \mathrm{M}$

## Answer:

7. Which of the following compounds will be suitable for Kjedahl's method of nitrogen estimation-
A.
B. $\begin{array}{r}4 \\ \hline 4\end{array}$
C.
.
D.

## Answer:

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8. When metal ' M ' is treated with NaOH , a white gelatinous precipitate ' X ' is obtained, which is soluble in excess of NaOH .

## Compound ' X ' when heated strongly gives an oxide which is used

 in chromatography as an adsorbent . The metal ' $M$ ' is -A. Al
B. Fe
C. Zn
D. Ca

## Answer:

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9. An aqueous solution contains $0.10 \mathrm{MH}_{2} \mathrm{~S}$ and 0.20 MHCl . If the equilibrium constants for the formation of $\mathrm{HS}^{-}$from $\mathrm{H}_{2} \mathrm{~S}$ is $1.0 \times 10^{-7}$ and that of $S^{2-}$ from $H S^{-}$ions is $1.2 \times 10^{-13}$ then the concentration of $S^{2-}$ ions in aqueous solution is -
A. $6 \times 10^{-21}$
B. $5 \times 10^{-19}$
C. $5 \times 10^{-8}$
D. $3 \times 10^{-20}$

## Answer:

## - Watch Video Solution

10. The oxidation states of Cr in $\left[\mathrm{Cr}\left(\mathrm{H}_{2} \mathrm{O}\right)_{6}\right] \mathrm{Cl}_{3},\left[\mathrm{Cr}\left(\mathrm{C}_{6} \mathrm{H}_{6}\right)_{2}\right]$ and $\mathrm{K}_{2}\left[\mathrm{Cr}(\mathrm{CN})_{2}(\mathrm{O})_{2}\left(\mathrm{O}_{2}\right)\left(\mathrm{NH}_{3}\right)\right]$ respectively are -
A. $+3,0$ and +6
B. $+3,0$ and +4
C. $+3,+4$ and +6
D. $+3,+2$ and +4

## Answer:

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11. The combustion of benzene (I) gives $\mathrm{CO}_{2}(g)$ and $\mathrm{H}_{2} \mathrm{O}(l)$. Given that heat of combustion of benzene at constant volume is $-3263.9 \mathrm{~kJ} \cdot \mathrm{~mol}^{-1}$ at $25^{\circ} \mathrm{C}$, heat of combustion ( in $k J \cdot \mathrm{~mol}^{-1}$ ) of benzene at constant pressure will be $\left(R=8.314 J \cdot K^{-1} \cdot \mathrm{~mol}^{-1}\right)$
A. 3260
B. -3267.6
C. 4152.6
D. -452.46

## Answer:

12. Which of the following are Lewis acids ?
A. $\mathrm{PH}_{3}$ and $S i C l_{4}$
B. $\mathrm{BCl}_{3}$ and $\mathrm{AlCl}_{3}$
C. $\mathrm{PH}_{3}$ and $\mathrm{BCl}_{3}$
D. $A l C l_{3}$ and $S i C l_{4}$

## Answer:

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13. Which of the following compounds contain (s) no covalent bond (s) ? $\mathrm{KCl}, \mathrm{PH}_{3}, \mathrm{O}_{2}, \mathrm{~B}_{2} \mathrm{H}_{6}, \mathrm{H}_{2} \mathrm{SO}_{4}$
B. $\mathrm{KCl}, \mathrm{B}_{2} \mathrm{H}_{6}$
C. $\mathrm{KCl}, \mathrm{B}_{2} \mathrm{H}_{6}, \mathrm{PH}_{3}$
D. $\mathrm{KCl}, \mathrm{H}_{2} \mathrm{SO}_{4}$

## Answer:

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14. According to molecular orbital theory, which of the following will not be a viable molecule?
A. $H_{2}^{-}$
B. $\mathrm{H}_{2}^{2-}$
C. $H e_{2}^{2+}$
D. $\mathrm{He}_{2}^{+}$

## Answer:

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## Neet 2018

1. Which one of the following elements is unable to form $M F_{6}^{3-}$ ion?
A. B
B. Al
C. Ga
D. In

## Answer:

2. A mixture of 2.3 g formic acid and 4.5 g oxalic acid is treated with conc. $\mathrm{H}_{2} \mathrm{SO}_{4}$. The evolved gaseous mixture is passed through KOH pellets. Weight (in g ) of the remaining product at STP will be -
A. 2.8
B. 3.0
C. 1.4
D. 4.4

## Answer:

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3. Which of the following oxides is most acidic in nature ?
A. BaO
B. BeO
C. MgO
D. CaO

## Answer:

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4. Which of the following molecules represents the order of hybridisation $s p^{2}, s p^{2}, s p, s p$ from left to right atoms ?
A. $\mathrm{CH}_{2}=\mathrm{CH}-\mathrm{CH}=\mathrm{CH}_{2}$
B. $\mathrm{CH}_{2}=\mathrm{CH}-\mathrm{C} \equiv \mathrm{CH}$
C. $H C \equiv C-C \equiv C H$
D. $\mathrm{CH}_{3}-\mathrm{CH}=\mathrm{CH}-\mathrm{CH}_{3}$

## Answer:

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5. Which of the following is correct with respect to -1 effect of the substituents ? ( $\mathrm{R}=$ alkyl)
A. $-\mathrm{NH}_{2}>-\mathrm{OR}>-F$
B. $-N R_{2}<-O R<-F$
C. $-\mathrm{NH}_{2}<-\mathrm{OR}<-F$
D. $-N R_{2}>-O R>-F$

## Answer:

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6. In which case is the number of molecules of water maximum ?
A. 0.00224 L of water vapours at 1 atm and 273 K
B. 0.18 g of water
C. 18 mL of water
D. $10^{-3} \mathrm{~mol}$ of water

## Answer:

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7. Give van der Waals constant for $\mathrm{NH}_{3}, \mathrm{H}_{2}, \mathrm{O}_{2}$ and $\mathrm{CO}_{2}$ are respectively $4.17,0.244,1.36$ and 3.59 , which one of the following gases is most easily liquefied ?
B. $H_{2}$
C. $\mathrm{NH}_{3}$
D. $\mathrm{CO}_{2}$

## Answer:

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8. The solubility of $\mathrm{BaSO}_{4}$ in water is $2.42 \times 10^{-3} g \cdot L^{-1}$ at 298

K . The value of its solubility product $\left(K_{s p}\right)$ will be
(Given molar mass of $\mathrm{BaSO}_{4}=233 \mathrm{~g} \cdot \mathrm{~mol}^{-1}$ )
A. $1.08 \times 10^{-14} \mathrm{~mol}^{2} \cdot L^{-2}$
B. $1.08 \times 10^{-12} \mathrm{~mol}^{2} \cdot L^{-2}$
C. $1.08 \times 10^{-10} \mathrm{~mol}^{2} \cdot L^{-2}$
D. $1.08 \times 10^{-8} \mathrm{~mol}^{2} \cdot L^{-2}$

## Answer:

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9. Following solutions were prepared by mixing different volumes of NaOH and HCl of different concentrations:
(i) $60 \mathrm{~mL}(\mathrm{M} / 10 \mathrm{HCl})+40 \mathrm{~mL}(\mathrm{M} / 10) \mathrm{NaOH}$
(ii) $55 \mathrm{~mL}(\mathrm{M} / 10) \mathrm{HCl}+45 \mathrm{~mL}(\mathrm{M} / 10) \mathrm{NaOH}$
(iii) $75 \mathrm{~mL}(\mathrm{M} / 5) \mathrm{HCl}+25 \mathrm{~mL}(\mathrm{M} / 5) \mathrm{NaOH}$
(iv) $100 \mathrm{~mL}(\mathrm{M} / 10) \mathrm{HCl}+100 \mathrm{~mL}(\mathrm{M} / 10) \mathrm{NaOH}$
pH of which one of them will be equal to 1 ?
A. (iv)
B. (i)
C. (ii)
D. (iii)

## Answer:

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10. Which oxide of nitrogen is not a common pollutant introduced into the atmosphere both due to natural and human activity ?
A. $\mathrm{N}_{2} \mathrm{O}$
B. $\mathrm{NO}_{2}$
C. $\mathrm{N}_{2} \mathrm{O}_{5}$
D. NO

## Answer:

11. Consider the following species : $C N^{+}, C N^{-}, N O$ and $C N$ Which one of the these will have the highest bond order ?
A. $C N^{+}$
B. $C N^{-}$
C. NO
D. $C N$

## Answer:

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12. For the redox reaction the correct coefficients of the reactants
for the balanced equation are -

$$
\mathrm{MnO}_{4}^{-}+\mathrm{C}_{2} \mathrm{O}_{4}^{2-}+\mathrm{H}^{+} \rightarrow \mathrm{Mn}^{2+}+\mathrm{CO}_{2}+\mathrm{H}_{2} \mathrm{O}
$$

A. $\begin{array}{lll}\mathrm{MnO}_{4}^{-} & \mathrm{C}_{2} \mathrm{O}_{4}^{2-} & \mathrm{H}^{+} \\ 2 & 16 & 5\end{array}$
${ }_{\mathrm{B}} \mathrm{MnO}_{4}^{-}$ $\mathrm{C}_{2} \mathrm{O}_{4}^{2-}$ $H^{+}$
2
C.
$\mathrm{MnO}_{4}^{-}$ 5 16
$\mathrm{C}_{2} \mathrm{O}_{4}^{2-}$
$H^{+}$
16
5
2
D. $\begin{array}{lll}\mathrm{MnO}_{4}^{-} & \mathrm{C}_{2} \mathrm{O}_{4}^{2-} & \mathrm{H}^{+} \\ 5 & 16 & 2\end{array}$

## Answer:

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13. Which one of the following conditions will favour maximum formation of the product in the reaction,

$$
A_{2}(g)+B_{2}(g) \Leftrightarrow X_{2}(g), \Delta_{r} H=-x k J ?
$$

A. High temperature and high pressure
B. Low temperature and low pressure
C. Low temperature and high pressure
D. High temperature and low pressure

## Answer: C

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14. The bond dissociation energies of $X_{2}, Y_{2}$ and $X Y$ are in the ratio of 1:0.5:1. $\Delta H$ for the formation of XY is $-200 \mathrm{~kJ} \cdot \mathrm{~mol}^{-1}$
. The bond dissociation energy of $X_{2}$ is -
A. $800 \mathrm{~kJ} \cdot \mathrm{~mol}^{-1}$
B. $100 \mathrm{~kJ} \cdot \mathrm{~mol}^{-1}$
C. $200 \mathrm{~kJ} \cdot \mathrm{~mol}^{-1}$
D. $400 \mathrm{~kJ} \cdot \mathrm{~mol}^{-1}$

## Answer:

15. The correction factor 'a' to the ideal gas equation corresponds to -
A. electric field present between the gas molecules
B. volume of the gas molecules
C. density of the gas molecules
D. forces of attraction between the gas molecules

## Answer:

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16. Magnesium reacts with an element $(X)$ to form an ionic compound. If the ground state electronic configuration of $(X)$ is $1 s^{2} 2 s^{2} 2 p^{3}$, the simplest formula for this compound is -

$$
\text { A. } M g_{2} X
$$

B. $M g X_{2}$
C. $M g_{2} X_{3}$
D. $M g_{3} X_{2}$

## Answer:

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17. The correct order of atomic radii in group - 13 elements is -
A. $B<G a<A l<T l<\ln$
B. $B<A l<G a<\ln <T l$
C. $B<A l<\ln <G a<T l$
D. $B<G a<A l<\ln <T l$

## Answer:

18. Among $\mathrm{CaH}_{2}, \mathrm{BeH}_{2}, \mathrm{BaH}_{2}$, order of ionic character is -
A. $\mathrm{BeH}_{2}<\mathrm{BaH}_{2}<\mathrm{CaH}_{2}$
B. $\mathrm{CaH}_{2}<\mathrm{BeH}_{2}<\mathrm{BaH}_{2}$
C. $\mathrm{BeH}_{2}<\mathrm{CaH}_{2}<\mathrm{BaH}_{2}$
D. $\mathrm{BaH}_{2}<\mathrm{BeH}_{2}<\mathrm{CaH}_{2}$

## Answer:

