



**CHEMISTRY**

**JEE MAIN AND ADVANCED**

**MOCK TEST 22**

**Example**

1. Hydrogen has three isotopes, the number of possible diatomic molecules will be

A. 3

B. 6

C. 8

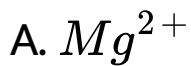
D. 9

**Answer: B**



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**2. Hydrogen gas reduces which metal ion in its aqueous solution?**



**Answer: C**



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**3. Hydrogen acts as a reducing agent and thus resembles**

A. Hydrogen

B. alkali metals

C. Nobel gas

D. both 1 and 2

**Answer: B**



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**4.** In which of the compounds, the oxidation state of hydrogen is  $-1$

A.  $H_2O$

B.  $CaH_2$

C.  $HBr$

D.  $H_2S$

**Answer: B**



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5. An element reacts with hydrogen to form a compound X which on treatment with water liberates hydrogen gas. The element can be

A. Fluorine

B. Nitrogen

C. Sodium

D. Oxygen

**Answer: C**



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6. High purity ( $> 99.95\%$ ) dihydrogen is obtained by electrolysis

A. *dil*  $H_2SO_4$  solutions

B. dil NaOH solutions

C. Aquash  $Ba(OH)_2$  solutions

D. Aquash KOH solutions

**Answer: C**



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7. Only temporary hardness in water is removed by :

A. calgon's method

B. clark's method

C. Ion-exchange method

D. synthetic resins method

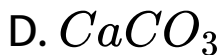
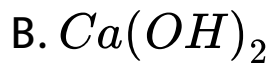
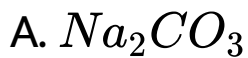
**Answer: B**



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**8.** In Clark's method the chemical used to remove hardness of water is



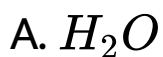


**Answer: B**



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**9. Heavy water is**



B. Water containing  $Mg^{2+}$  &  $Ca^{2+}$  ions

C.  $D_2O$

D. Water at 4 degree celcius

**Answer: C**



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**10.** The incorrect statement about the structure of  $H_2O_2$  is

A. It is non-linear and non-planar molecule

B. It has an open book type structure

C. Dihedral angle in both gas phase and solid phase is 111.5deg

D. Dihedral angle in gas phase is 111.5deg and in solid phase is 90.2deg

**Answer: C**



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11. Percentage strength of 20 volume  $H_2O_2$  solution is

A. 0.03

B. 6 %

C. 0.2

D. 0.15

**Answer: B**



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12. Which of the following metals will react directly with nitrogen to form nitride?

A. Na

B. K

C. Cs

D. Li

**Answer: D**



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13. Which is the correct order for the hydration energy of alkali metal ions?



**Answer: C**



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**14.** The colour given to the flame by sodium salt is

A. Violet

B. Green

C. Blue

D. Golden yellow

**Answer: D**



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15. The following pair that cannot exist in solution is

A. NaOH and KOH

B. NaCl and KCl

C.  $\text{NaHCO}_3$  and NaOH

D.  $\text{Na}_2\text{CO}_3$  and NaOH

**Answer: C**



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16. When NaOH is prepared in Castner-Kellner cell, the gas evolved at the anode is

A.  $O_2$

B.  $O_3$

C.  $Cl_2$

D. HCl

**Answer: C**



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17. For alkali metals, which of the following trends is incorrect?

A. Melting point :  $Li > Na > K > Rb$

B. *Density*:  $Rb > Na > K > Li$

C. Metallic radius:  $Rb > K > Na > Li$

D. Ionization enthalpy :

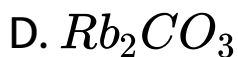
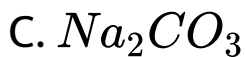
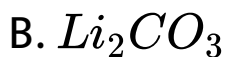
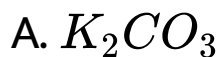
$Li > K > Na > Rb$

**Answer: D**



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18. Which among the following carbonates is thermally least stable?



**Answer: B**



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**19.** Which is incorrect statement about lithium and magnesium?

A. Lithium and magnesium do not form superoxide

B. LiCl and MgCl, are soluble in ethanol

C. Li and Mg salts do not respond to flame test

D. Carbonates of Li and Mg decompose easily on heating

**Answer: C**



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20. Which of the following is not required in the Solvay's process for the manufacture of  $Na_2CO_3$ ?

A.  $NH_3$

B.  $CO_2$

C. NaCl

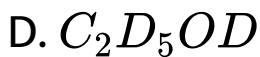
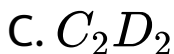
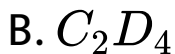
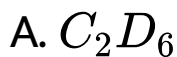
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**Answer: D**



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21. What is formed when calcium carbide reacts with heavy water?



**Answer: C**



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