



## CHEMISTRY

### BOOKS - NTA MOCK TESTS

#### NTA JEE MOCK TEST 104

#### Chemistry

1. Molarity , normality and molality of the solution containing 22% of

$Al_2(SO_4)_3$  { $d = 1.253g/mL$ } by weight are

A.  $4.83N$ ,  $8.25M$ ,  $8.25m$

B.  $48.3N$ ,  $0.825M$ ,  $0.825m$

C.  $4.83N$ ,  $4.83M$ ,  $4.83m$

D.  $4.83N$ ,  $0.805M$ ,  $0.825m$

**Answer: C**



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2. For the reaction  $N_2 + 3H_2 \rightarrow 2NH_3$ , if  $\frac{d[NH_3]}{dt} = 4 \times 10^{-4} \text{ mol L}^{-1}\text{s}^{-1}$ , the value of  $\frac{-d[H_2]}{dt}$  would be

A.  $3 \times 10^{-4} \text{ mol l}^{-1}\text{s}^{-1}$

B.  $4 \times 10^{-4} \text{ mol l}^{-1}\text{s}^{-1}$

C.  $6 \times 10^{-4} \text{ mol l}^{-1}\text{s}^{-1}$

D.  $6.5 \times 10^{-4} \text{ mol l}^{-1}\text{s}^{-1}$

Answer: C



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3. Which is the most stable carbocation among the following ?

A. Iso - butyl cation

B. Triphenyl methyl cation

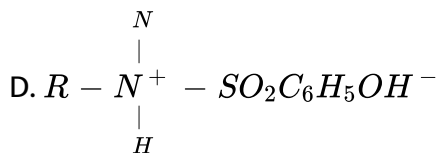
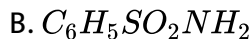
C. Cyclopropyl methyl cation

D. t-Butyl cation

**Answer: B**

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4. Hinsberg reagent is benzenesulfonyl chloride. In aqueous KOH this reacts with primary amine ( $RNH_2$ ) to give a clear solution which on acidification gives a white on acidification gives a white precipitate, which is due to the formation of



**Answer: A**



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5. Which types of bonds is/are present in diborane ( $B_2H_6$ )?

- A. Ionic bond
- B. Three centre bond
- C. Hydrogen bond
- D. Co - ordinate bond

**Answer: B**



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6. According to Werner's theory of coordination compounds ,

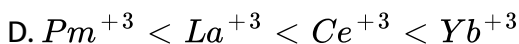
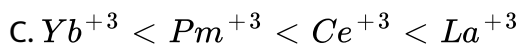
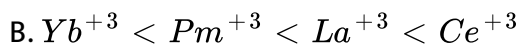
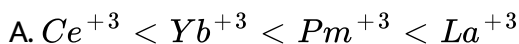
- A. Primary valency are ionization in nature.
- B. Secondary valency are ionizable in nature.
- C. Primary and seocndary valencies both are ionizable in nature.

D. Only primary valency is not ionizable in nature.

**Answer: A**

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7. Arrange  $Ce^{3+}$ ,  $La^{3+}$ ,  $Pm^{3+}$  and  $Yb^{3+}$  in increasing order of their size -



**Answer: C**

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8. The change in optical rotation with time of freshly prepared solution of sugar is known as :

- A. Mutarotation
- B. Hydrolysis
- C. Rotatory motion
- D. Specific angle rotation

**Answer: A**



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9. Which of the given below is a natural biodegradable polymer ?

- A. Nylon -2- Nylon -6
- B. Poly lactic acid polymer
- C. Cellulose
- D. Nylon -2 polymer

**Answer: C**



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**10.** Certain crystals produce electric signals on application of pressure .This phenomenon is called

- A. Ferrielectricity
- B. Ferroelectricity
- C. Peizelectricity
- D. Pyroelectricity

**Answer: C**



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**11.** Which statement is correct about chemisorptions?

- A. It is irreversible in nature
- B. It involves formation multi layer of adsorbent on adsorbate
- C. Decreases with increase of temperature
- D. It involves the weak attractive forces between adsorbent and adsorbate

**Answer: A**

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**12.** Bauxite, the ore of aluminium is purified by which process ?

- A. Electrolytic reduction
- B. Hall and Heroult process
- C. Baeyer's process
- D. Serpeck's process

**Answer: C**





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13. Which set of conditions are correct for spontaneity of an electrochemical cell reaction?

A.  $\Delta G = 0, \Delta E = 0$

B.  $\Delta G = +ve, \Delta E = +ve$

C.  $\Delta G = -ve, \Delta E = 0$

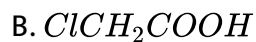
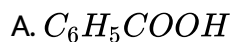
D.  $\Delta G = -ve, \Delta E = +ve$

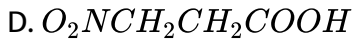
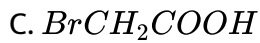
Answer: D



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14. Which of the following compounds is most acidic?





**Answer: B**



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15. Which of the following drugs is an analgesic?

A. Iodex

B. Tincture iodine

C. Tetracyclin

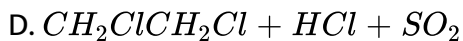
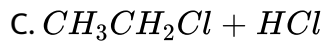
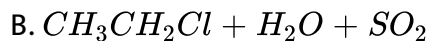
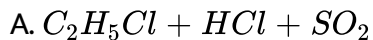
D. Aspirin

**Answer: D**



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16. What are the products obtained when ethyl alcohol ( $C_2H_5OH$ ) reacts with thionyl chloride?



**Answer: A**



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17. For the reaction of one mole of zinc dust with one mole of sulphuric acid in a bomb calorimeter  $\Delta U$  and  $w$  correspond to

A.  $\Delta U > 0, w = 0$

B.  $\Delta U < 0, w = 0$

C.  $\Delta U, w = 0$

D.  $\Delta U < 0, w > 0$

**Answer: A**

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**18.** The alcoholic solution of KOH is used in which type of the organic reactions?

- A. Decarboxylation
- B. Dehydrogenation
- C. Dehydrohalogenation
- D. Dehydration

**Answer: C**

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19. Which of the following pairs of compounds are position isomers?

- A. Isobutyl carbinol and s -butyl alcohol
- B. Isobutyl alcohol and t - buty alcohol
- C. Neopentyl alcohol and isopentyl alcohol
- D. Vinyl alcohol and ethylene glycol

**Answer: B**



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20. The formula for chile salt petre and indian salt petre is

- A.  $NaNO_3$ ,  $KNO_3$
- B.  $Na_2SO_4 \cdot 10H_2O$
- C.  $KNO_3$ ,  $NaNO_3$
- D.  $Na_2S_2O_3 \cdot 5H_2O$ ,  $KNO_3$

Answer: A

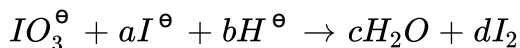
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21. The number of the given compounds, which can form iodoform with alkali and iodine Diethyl ketone, Acetone, Ethyl chloride, Catechol, Resorcinol, Isopropyl alcohol, Acetophenone, Butanone, Laactic acid ( $COOH$  |  $CH - OH$ ) and salicylic acid.

|  
 $CH_3$

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22. In the balanced chemical reaction



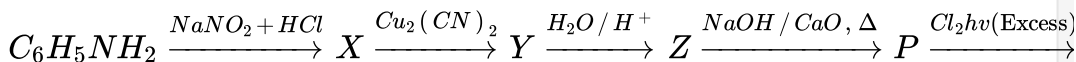
$a$ ,  $b$ ,  $c$ , and  $d$ , respectively, correspond to

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23. 50 mL of hydrogen diffuse through a small hole from a vessel in 20 minutes time. Time taken for 40 ml of oxygen to diffuse out under similar conditions will be :

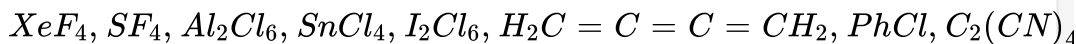
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24. Identify the total number of atoms in product Q in the given sequence of reaction



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25. The number of compounds having all atoms in a single plane are



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