



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 109

Chemistry

1. In which pair does the second element have less ionisation energy than the first element?

A. Na, Mg

B. Mg, Al

C. O, F

D. B, C

Answer: B



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2. EDTA can acts as ?

- A. Complexing agent
- B. Chelating ligand
- C. Antidote for lead poisoning
- D. All of the above

Answer: D



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3. In metallurgy, among the following metal which is obtained with blistered appearance ?

- A. Fe
- B. Cu

C. Zn

D. Pb

Answer: B



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4. Banana bonds are not present in ?

A. B_2H_6

B. $(BeH_2)_n$

C. $(MgH_2)_n$

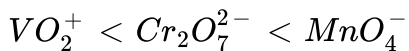
D. $(BeCl_2)_n$

Answer: A



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5. Following order is observed in oxidising power of certain ions:



The reason for this increasing order of oxidising power is:

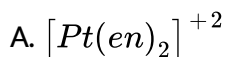
- A. Increasing stability of the lower species to which they are reduced.
- B. Increasing stability of the higher species to which they are oxidised.
- C. Increasing stability of the higher species to which they are reduced.
- D. Increasing stability of the lower species to which they are oxidised.

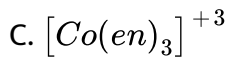
Answer: A



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6. Fac-Mer isomerism is associated with which one of the following complexes?





Answer: B



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7. Give the correct order of initials T or F for following statements respectively. Use T if statement is true and F if it is false.

(I) $Na_2[Fe(CN)_5(NO)]$ reacts with Sulphide ions to form a purple coloured compound $Na_4[Fe(CN)_5(NOS)]$.

In this reaction, the oxidation state of iron changes.

(II) Ni(IV) compounds are relatively less stable than Pt(IV) compounds.

(III) The welding of magnesium can be done in the atmosphere of helium.

(IV) On hydrolysis of $LiAlH_4$, it will give H_2

A. FFTT

B. FTTF

C. TFTF

D. TFFT

Answer: B

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8. $CH_3CH_2OH \xrightarrow{P+I_2} A \xrightarrow[\text{Ether}]{Mg} B \xrightarrow{HCHO} C \xrightarrow{H_2O} D$ The product 'D' is:-

A. Butanal

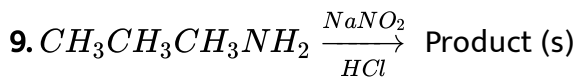
B. n - butyl alcohol

C. n - propyl alcohol

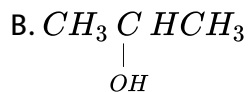
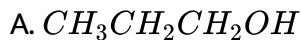
D. Isopropyl alcohol

Answer: C

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Which of the following is not possible as product ?



Answer: D

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10. Identify the Vitamin B which can be stored in the human body.

A. Vitamin B_{12}

B. Vitamin B_2

C. Vitamin B_6

D. Vitamin B_{10}

Answer: A



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11. Which of the following forms a primary alcohol when reacts with Grignard's reagent?

A. CH_3CHO

B. HCHO

C. CH_3COCH_3

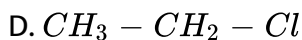
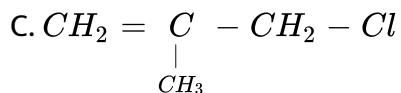
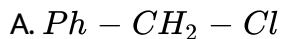
D. CH_3COOH

Answer: B



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12. Which of the following will give E_2 elimination product on reaction with tertiary butyl alcohol ?

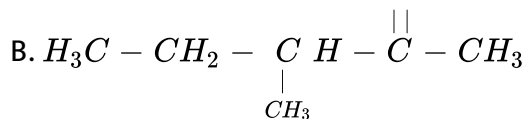
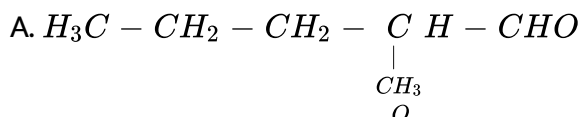


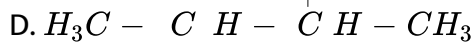
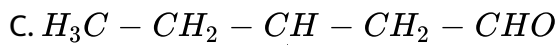
Answer: D



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13. Choose the correct optically active isomer of $C_6H_{12}O$ that gives a positive Tollen's test and does not racemise in base.





Answer: C

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14. What is the correct decreasing order for acid strength ?

A.



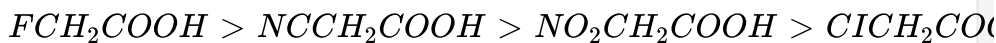
B.



C.



D.



Answer: B

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15. What is the correct order of reducing the power of the following metals given that the standard reduction potential values of three metallic cations, X, Y and Z are 0.52, - 3.03 and - 1.18 V respectively.

A. $Z > X > Y$

B. $X > Y > Z$

C. $Z > Y > X$

D. $Y > Z > X$

Answer: D

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16. According to Raoult's law, which of the following liquid mixture is expected to have positive deviation ?

- A. Water -nitric acid
- B. Benzene -methanol
- C. Water-hydrochloric acid
- D. Acetone-chloroform

Answer: B



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17. The number of atoms in 3.2g of oxygen gas are:

- A. 6.02×10^{22}
- B. 6.02×10^{23}
- C. 12.04×10^{22}

D. 12.04×10^{23}

Answer: C



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18. 10^{-5} M NaOH solution at 25°C is diluted 1000 times. The pH of the resultant solution will :-

- A. be equal to 8
- B. lie between 7 and 8
- C. lie between 6 and 7
- D. remain unchanged

Answer: B



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19. For an endothermic reaction which is non-spontaneous at 0 °C and becomes feasible at 100 °C, which of the following is correct regarding enthalpy and entropy ?

- A. ΔH is -ve, ΔS is +ve
- B. Both ΔH and ΔS are + ve
- C. Both ΔH and ΔS are -ve
- D. ΔH is +ve, ΔS is -ve

Answer: B

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20. The percentage of 'p' character of the hybrid orbitals in methane is:

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21. The group 15 elements have.....electrons in the outermost shell.



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22. The reagent(s) which can be used to distinguish acetophenone from benzophenone is/are_____.

Fehling's solution



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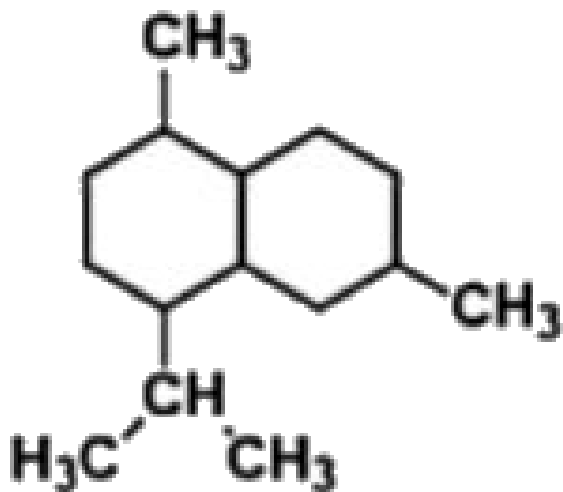
23. How many moles of butane on combustion will give 8627.52 kJ of energy ?

(ΔH for butane $-2875.84 \text{ kJmol}^{-1}$)



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24. By monochlorination of above compound, the number of products (structural isomers only) are formed a number X.



Report your answer as $\frac{x}{2}$

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25. 50 mL of 0.2 M ammonia solution is treated with 25 mL of 0.2 M HCl. If pK_b of ammonia solution is 4.75, the pH of the mixture will be _____

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26. How many of the following are positively charged sols? Gold sol, Sb_2S_3 sol, eosin sol, haemoglobin, starch sol, methylene blue sol, aluminium hydroxide sol, gelatin sol

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27. A certain metal has fcc unit cell with an edge length of 400pm. The length of face diagonal is ____ pm.

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28. How many electrons in a fully filled f-subshell have $m_l = 0$?

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29. At 298 K the value of rate constant for a reaction $A + B \rightarrow C$ is $1.10M^{-1}s^{-1}$. At the same temperature, if the concentration of reactant

is doubled keeping the concentration of 'A' constant, the value of rate constant (k) will be _____ $M^{-1} s^{-1}$



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