



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA TPC JEE MAIN TEST 64

Chemistry

1. Find the formal charge and oxidation state of the central oxygen atom in O_3 .

A. 0, 0

B. +1, 0

C. +1, -1

D. -1, 0

Answer: B



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2. Ionization energy of elements Be, Ne, He and N in kJ / mol respectively is:

A. 900, 2080, 1402, 2372

B. 2080, 900, 1402, 2372

C. 900, 2080, 2372, 1402

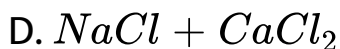
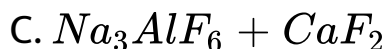
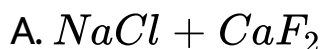
D. 2372, 900, 2080, 1402

Answer: C



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3. Which of the following chemical mixture is added to Al_2O_3 in Hall-Heroult process?



Answer: C



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4. Which of the following statements is incorrect?

A. Hardness of water is shown by its behaviour towards soap.

B. The temporary hardness is due to the presence of Ca and Mg bicarbonates.

C. Permanent hardness is due to the presence of soluble Ca and Mg sulphates and chloride.

D. Permanent hardness can be removed boiling the water.

Answer: D



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5. Larger number of oxidation states are exhibited by the actinoides than those by the lanthanoids, the main reason being :

- A. Lesser energy difference between 5f and 6d than 4f and 5d orbitals
- B. More energy difference between 5f and 6d than between 4f and 5d orbitals

C. More reactive nature of the actinoids than the lanthanoids

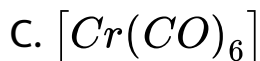
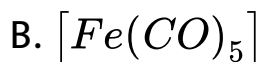
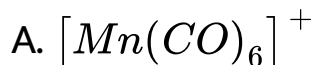
D. 4f orbitals are more diffused than 5f orbitals

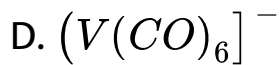
Answer: A



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6. Among the following metal carbonyls, the C - O bond order is lowest in :





Answer: D



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7. Oxidation number of potassium in K_2O , K_2O_2 and KO_2 , respectively:

A. +1, +1, +1

B. +1, +4, +1

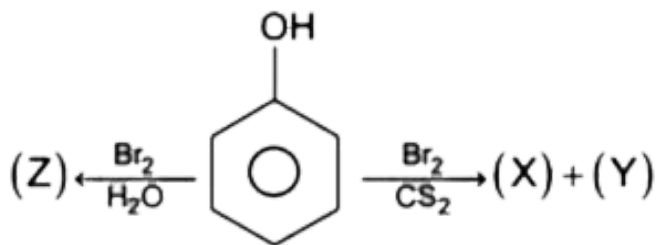
C. +2, +1, +1

D. +1, +1, +2

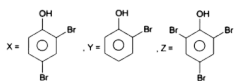
Answer: A

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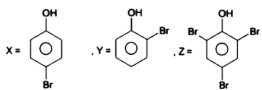
8. Identify the correct structures of 'X', 'Y' and 'Z'.



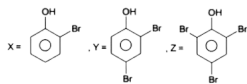
A.



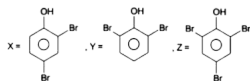
B.



C.



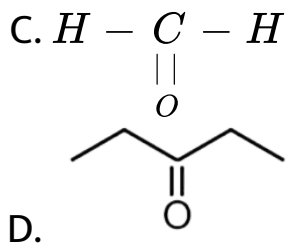
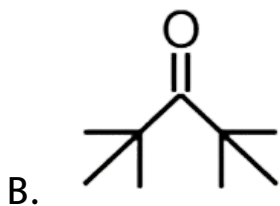
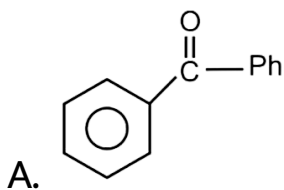
D.



Answer: B

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9. For nucleophilic addition reaction, which of the following compound is more reactive than acetone?



D. 

Answer: C



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10. How many amino acids are presents in insulin hormone :

A. 51

B. 41

C. 101

D. 201

Answer: A



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11. Which of the following is an ambident nucleophile :



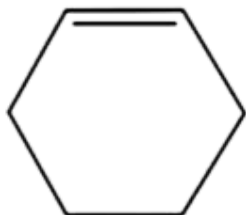
D. All of these

Answer: D

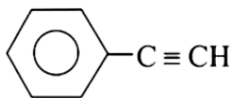


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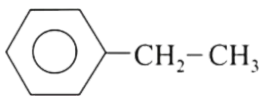
12. Which of the following compound does not decolourise bromine-water solution ?



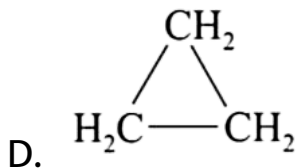
A.



B.



C.



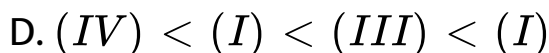
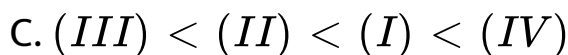
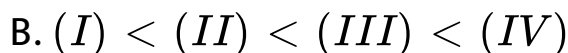
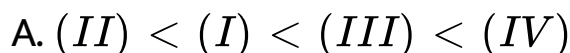
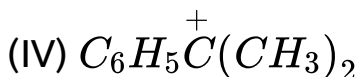
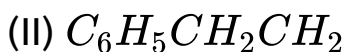
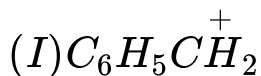
D.

Answer: C



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13. Arrange the following carbocations according to their stability order

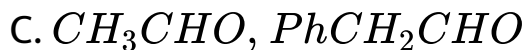
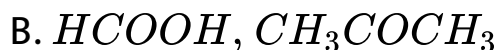


Answer: A



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14. Which of the following pair cannot be distinguished by Tollen's reagent :



Answer: C



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15. Statement I : 2-acetoxy benzoic acid can cause ulcer in the stomach when taken in empty stomach.

Statement II : This compound is aspirin which prevents platelets coagulation as it has a blood clotting agent.

Which of the following is correct for the given statements?

A. Both Statement I and Statement II are true and the Statement II is the correct explanation of the Statement I.

B. Both Statement and Statement II are true and the Statement II is not the correct explanation of the Statement I.

C. Statement I is true but Statement II is false.

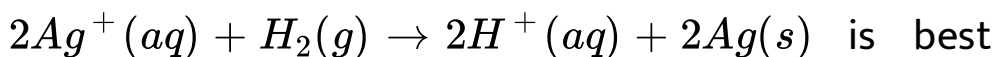
D. Both Statement I and Statement II are false.

Answer: C

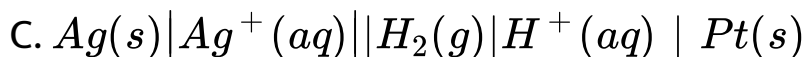
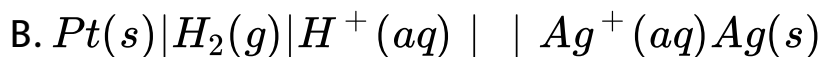
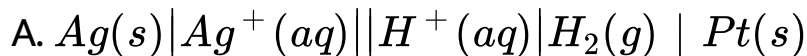


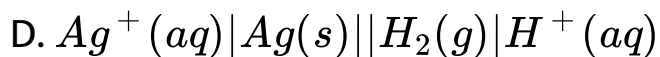
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16. The cell reaction



is best represented by :





Answer: B



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17. The co-ordination number of a metal crystallising in a hexagonal close packed structure is:

A. 12

B. 4

C. 8

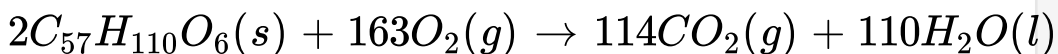
D. 6

Answer: A



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18. The mass of water produced from 445 g of $C_{57}H_{110}O_6$ for the following reaction is:



A. 490 g

B. 890 g

C. 445 g

D. 495 g

Answer: D



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19. A gas X(g) effuses 3 times faster than gas Y(g) then ratio of density of X and Y is :

A. 3 : 1

B. 1 : 3

C. 9 : 1

D. 1 : 9

Answer: D



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20. Rydberg has given the equation for all visible radiation in the hydrogen spectrum as $\lambda = \frac{kn^2}{n^2 - 4}$.

The value of k in terms of Rydberg constant is :

A. $4R$

B. $\frac{R}{4}$

C. $\frac{4}{R}$

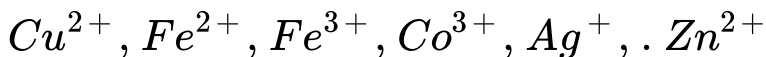
D. R

Answer: C



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21. Calculate number of metal cations which form octahedral complex with excess CN ion



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22. Find the correct matched option with respect to compounds of xenon and its shape.

i. $XeF_6 \rightarrow$ Distorted octahedral

ii. $XeO_3 \rightarrow$ Tetrahedral

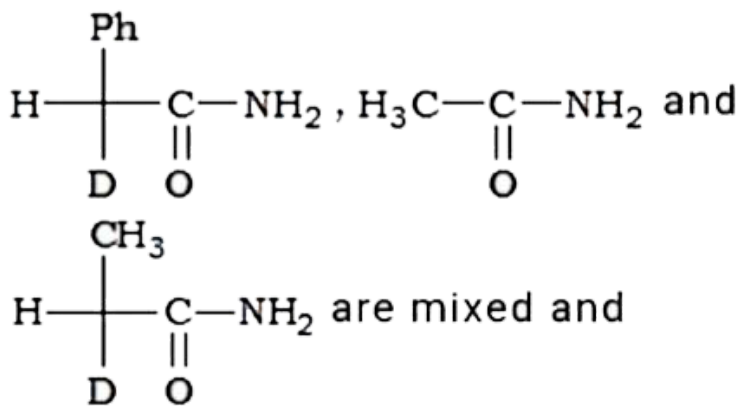
iii. $XeOF_4 \rightarrow$ Distorted octahedral

iv. $XeF_4 \rightarrow$ Distorted octahedral

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23. Thiosulphuric acid contains how many number of Pi bonds?

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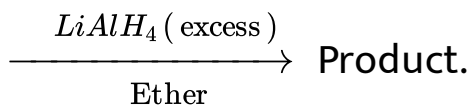
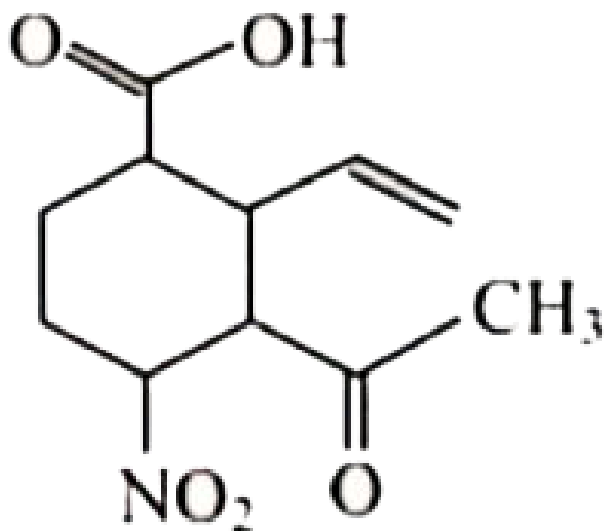


are mixed and reacted with Br_2 / KOH .

How many different type of amines are obtained?

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25. Count the number of pi bonds in the major product:



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26. The K_{sp} of the sparingly soluble salt MX is $2.50 \times 10^{-9} M^2$ at 298K. The solubility of this salt at this temperature is $x \times 10^{-5} molL^{-1}$. The value of x is

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27. What is the average oxidation number of sulphur in $Na_2S_4O_6$?

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28. An ideal solution is formed by mixing $23\text{g } C_2H_5OH$ with 16.0g of CH_3OH at the same temperature. The vapour pressures of pure C_2H_5OH and CH_3OH are 40mm of Hg and 80mm of Hg respectively and total vapour pressure of the solution is x cm of Hg. Find x .

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29. What is the value of ΔG° (in Jmol^{-1}) for the following equation at 300K temperature?

$A(g) + B(g)$ If the E_a of the backward reaction minus that of the forward reaction is equal to $2RT$ (in Jmol^{-1}) and the pre-exponential factor for

the forward reaction is 4 times of that for the reverse reaction.

(Given, $\ln(2) = 0.7$, $RT = 2500 \text{ J mol}^{-1}$ at 300 K and

G is the Gibbs energy)



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30. What will be the calorific value (in kJ g^{-1}) for methane if it is observed that when methane burns, $890.3 \text{ kJ mol}^{-1}$ of energy is released?



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