



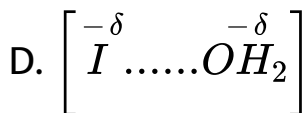
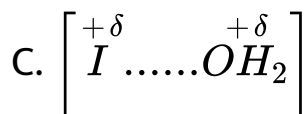
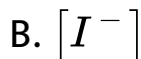
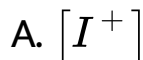
CHEMISTRY

NTA MOCK TESTS ENGLISH

NTA JEE MOCK TEST 69

Chemistry

1. Benzene cannot be iodinated with I_2 directly. However, in presence of oxidants such as HNO_3 , iodination is possible. The electrophiles formed in the case is



Answer: A



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2. 10g of a sample of a mixture of $CaCl_2$ and $NaCl$ is treated to precipitate all the calcium as $CaCO_3$. This $CaCO_3$ is heated to convert all the Ca to CaO and the final mass of CaO is 1.62 g. The percent by mass of $CaCl_2$ in the original mixture is

A. 15.2 %

B. 32.1 %

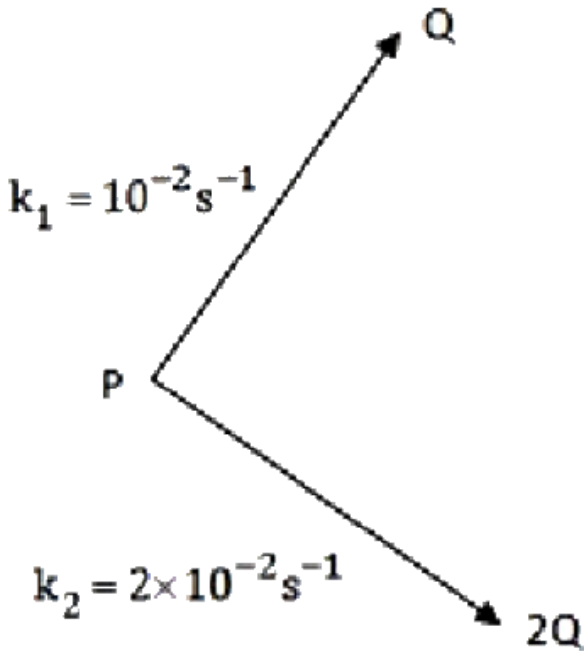
C. 21.8 %

D. 11.07 %

Answer: B



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3.

Let the initial concentration of P is 1 M, the concentration of P after 33.33 sec is equal to?

- A. $\frac{1}{e}$
- B. $\frac{2}{e}$
- C. $\frac{1}{e^2}$

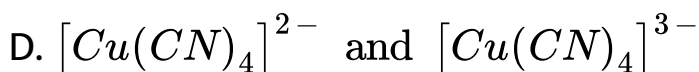
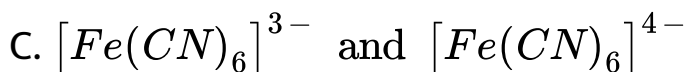
D. e

Answer: A



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4. Among the following pair of complexes in which case the central atoms are having some hybridisation and have same values of E.A.N. also.

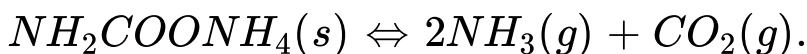


Answer: B



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5. Solid Ammonium carbamate dissociates as:



In a closed vessel, solid ammonium carbamate is in equilibrium with its dissociation products. At equilibrium, ammonia is added such that the partial pressure of NH_3 at new equilibrium now equals the original total pressure. Calculate the ratio of total pressure at new equilibrium to that of original total pressure.

A. $\frac{27}{31}$

B. $\frac{31}{27}$

C. $\frac{4}{9}$

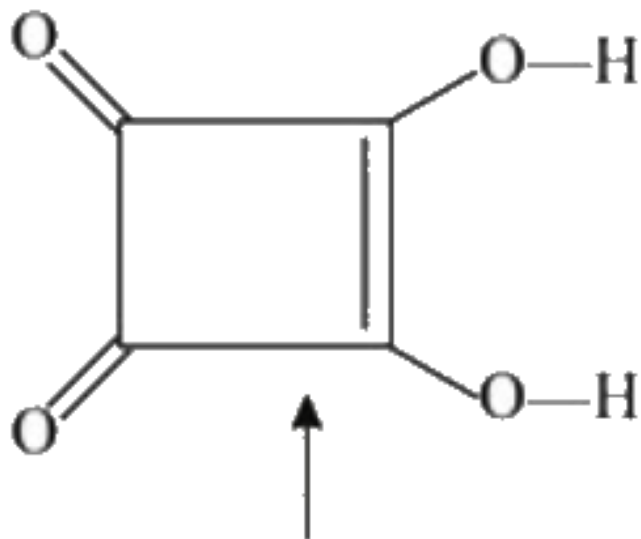
D. $\frac{41}{9}$

Answer: B



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6. Consider the following compound (A). Select the correct statement.



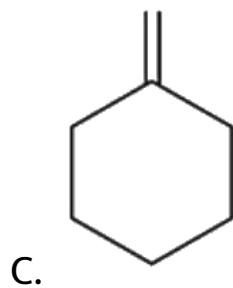
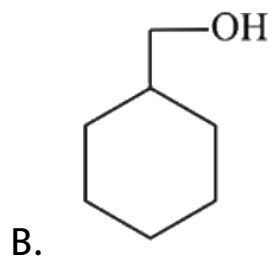
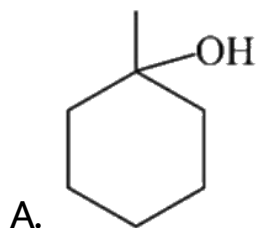
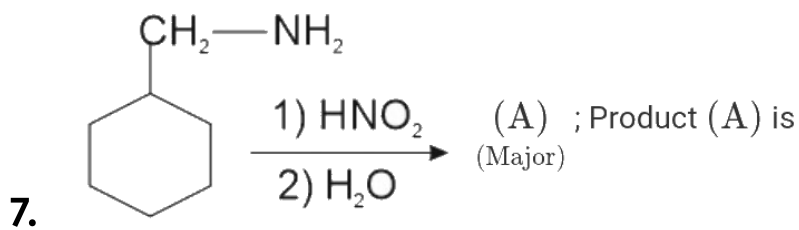
Compound (A)

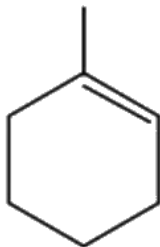
- A. It is more acidic than CH_3OH
- B. It is more acidic than H_2SO_4
- C. It does not react with CH_3MgBr
- D. It is a tribasic acid

Answer: A



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D.

Answer: A

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8. $[XeO_6]^{4-}$ is octahedral whereas XeF_6 is a disordered one, because

A. fluorine is more electronegative than oxygen

B. Xe has a lone pair in XeF_6

C. XeF_6 is neutral whereas $[XeO_6]^{4-}$ anionic

D. $Xe - F$ bond has more ionic characters

Answer: B



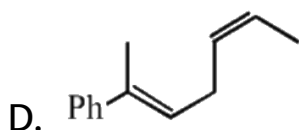
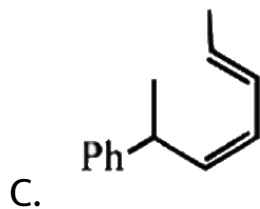
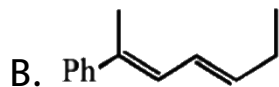
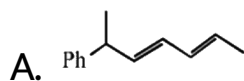
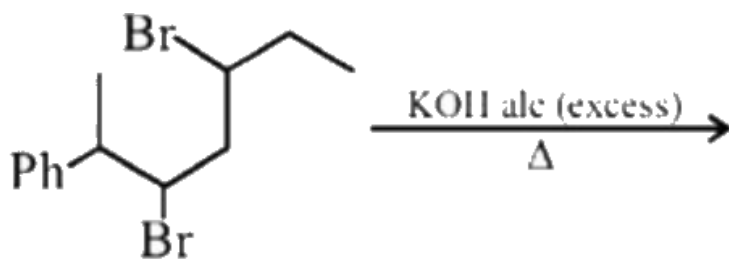
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9. Which of the following is least basic?



Answer: A

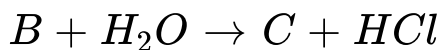
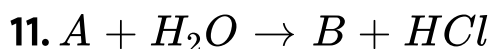
10. The major product of the following reaction is



Answer: B



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Compound (A), (B) and (C) will be respectively:

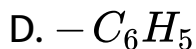


Answer: B



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12. In assigning R-S configuration which among the following groups has highest priority?



Answer: A



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13. The pH of blood stream is maintained by a proper balance of H_2CO_3 and $NaHCO_3$ concentration. What volume of 5 M $NaHCO_3$ solution should be mixed with a 10 mL sample of blood which is 2M in H_2CO_3 in order to maintain its pH of 7.4?

$$[pK_a \text{ for } H_2CO_3 = 6.1] [10^{1.3} = 19.9]$$

A. 40 ml

B. 35 ml

C. 25 ml

D. 38 ml

Answer: A



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14. A metal on combustion in excess air forms X. X upon hydrolysis with water yields H_2O_2 and O_2 along with another product. The metal is :

A. Li

B. Na

C. Rb

D. Mg

Answer: C



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15. An electron practically at rest, is initially accelerated through a potential difference of 100 volts. It then has a de Broglie wavelength $= \lambda_1 \text{\AA}$. It then get retorted through 19 volts and then has a wavelength $\lambda_2 \text{\AA}$. A further retardation through 32 volts changes the wavelength to λ_3 . What is the value of $\frac{\lambda_3 - \lambda_2}{\lambda_1}$?

A. $\frac{20}{41}$

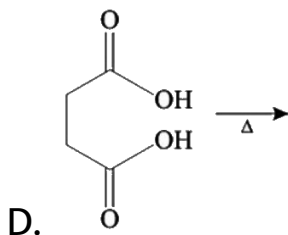
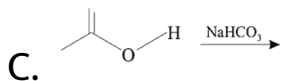
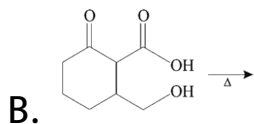
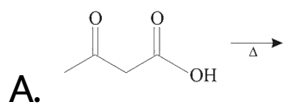
B. $\frac{10}{63}$

C. $\frac{20}{63}$

D. $\frac{10}{41}$

Answer: C

16. In which of the following reaction CO_2 (carbon dioxide) is not released?



Answer: D



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17. The helical structure of proteins is stabilised by

- A. Dipeptide bonds
- B. Hydrogen bonds
- C. Ether bonds
- D. Peptide bonds

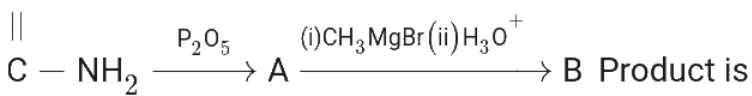
Answer: B



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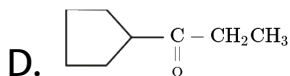
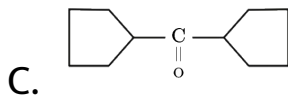
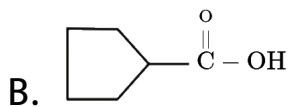
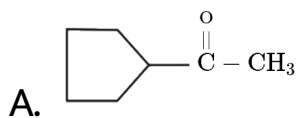
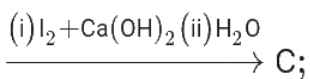


O



Product is

18.

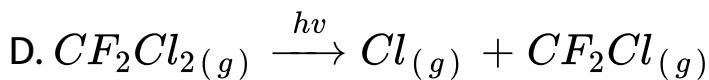
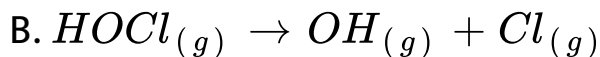
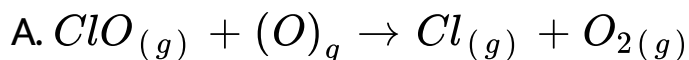


Answer: B



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19. The reaction that is NOT involved in the ozone layer depletion mechanism in the stratosphere is

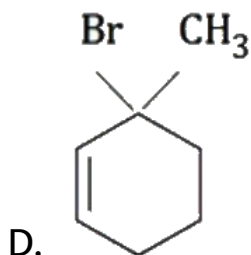
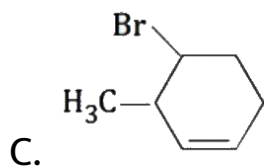
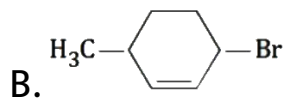
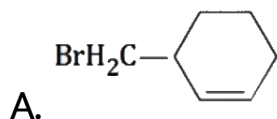
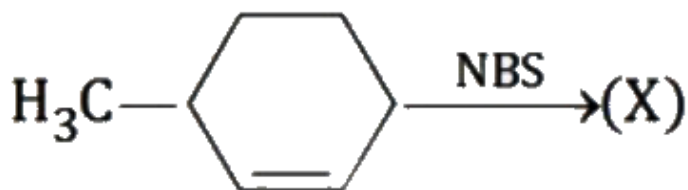


Answer: C



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20. The major product (X) of the monobromination reaction is



Answer: D



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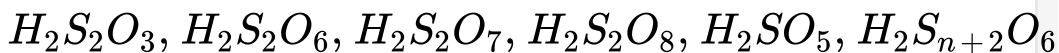
21. For the reaction $A \rightleftharpoons B + C$ at equilibrium, the concentration of A is $1 \times 10^{-3} M$ B is 0.15 M and C is 0.05 M. The ΔG° for the hydrolysis of A at 300 K is $-X$ kJ/mole. The value of X is ?

Report your answer by rounding it upto nearest integer.



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22. How many of these acids have $S - S$ bonds?



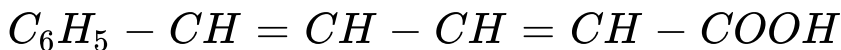
.

(polythionic acid).



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23. The number of geometrical isomers of the compound is



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24. Perovskite is a mineral composed of Ca , Ti and oxygen, cations of titanium lie at the centre, oxides ions at the face centres and calcium ions lie at corners. In this compound the oxidation number of Titanium is $+x$. Find the value of x ?



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25. Which of the following carbocation is most stable ?

(a) $(CH_3)_3C \cdot \overset{+}{C}H_2$ (b) $(CH_3)_3\overset{+}{C}$ (c) $CH_3CH_2\overset{+}{C}H_2$ (d) $CH_3\overset{+}{C}HCH_2CH_3$



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