

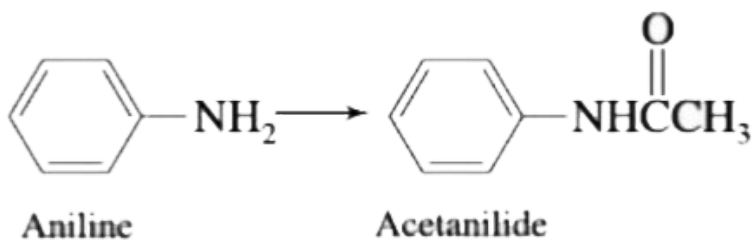
CHEMISTRY

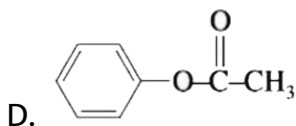
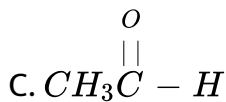
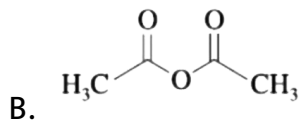
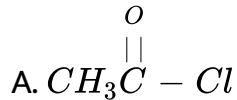
BOOKS - NTA MOCK TESTS

NTA JEE MOCK TEST 39

Chemistry

1. All but one of the following compounds reacts with aniline to give acetanilide. Which one does not?

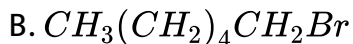
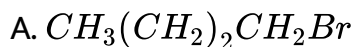


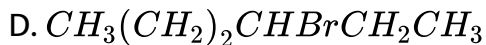
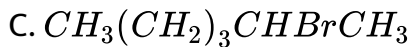


Answer: D

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2. An alkyl bromide reacts with *Na* metal to form 4,5-diethyl octane. The bromide is



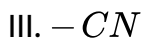
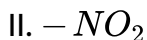


Answer: D



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3. The decreasing order of -I effect of the following is



A. I gt II gt III gt IV

B. II gt I gt III gt IV

C. I gt II gt III gt IV

D. II gt I gt IV gt III

Answer: A

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4. Which of the following molecules have zero dipole moment?

(I) gauche conformation of 1, 2 - dibromoethane.

(II) anti conformation of 1, 2 - dibromoethane.

(III) trans - 1, 4 - dibromocyclohexane

(IV) cis - 1, 4 - dibromocyclohexane

(V) tetrabromomethane.

(VI) 1, 1 - dibromocyclohexane

A. I and II

B. II, III and V

C. II and V

D. I, IV and VI

Answer: B

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5. Which of the following metals cannot be extracted by carbon reduction process?

A. Pb

B. Al

C. Hg

D. Zn

Answer: B

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6. Sodium and potassium react with water much more vigorously than lithium because :

A. Sodium and potassium have high values of hydration energy as compared to that of lithium.

B. Sodium and potassium have higher melting point than that of lithium.

C. Sodium and potassium have lower melting point than that of lithium.

D. Sodium and potassium have lower hydration energy than that of lithium.

Answer: C



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7. For H_3PO_3 and H_3PO_4 the correct choice is

- A. H_3PO_3 is dibasic and reducing agent.
- B. H_3PO_3 is dibasic and non - reducing agent.
- C. H_3PO_4 is tribasic and reducing agent.
- D. H_3PO_4 is dibasic and non - reducing agent.

Answer: A



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8. Choose the biodegradable pollutant out of the following.

- A. DDT
- B. Polyglycolic acid
- C. Alkyl benzene sulphonate
- D. Mercury

Answer: B

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9. Anhydrous ferric chloride is prepared by

- A. Heating hydrated ferric chloride at a high temperature in a stream of dry chlorine gas.
- B. Heating metallic iron in a stream of dry chlorine gas.
- C. Reaction of ferric oxide with $HCl(aq)$.
- D. Reaction of metallic iron with $HCl(aq)$.

Answer: B

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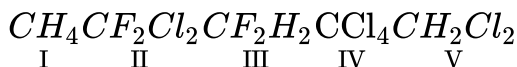
10. Which of the following statements about physical adsorption is not correct?

- A. It is usually monolayer
- B. It is reversible in nature
- C. It involves van der Waals interactions between adsorbent and adsorbate
- D. It involves small value of adsorption

Answer: A

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11. Arrange the following molecules from most to least polar.



- A. III gt V gt II gt I = IV

B. II gt IV gt III gt IV gt I

C. III gt II gt V gt IV gt I

D. V gt III gt II gt IV gt I

Answer: A



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12. Which of the following statements is incorrect for ethylene dichloride and ethylidene chloride?

A. These are structural isomers

B. Both of these yields same product on reaction with alcoholic KOH solution

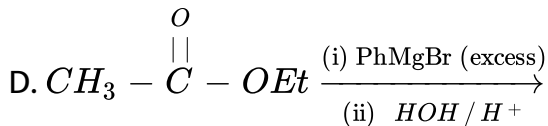
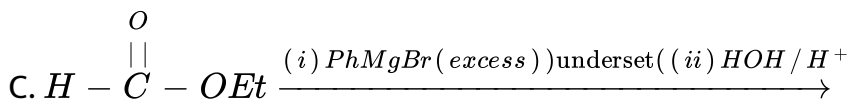
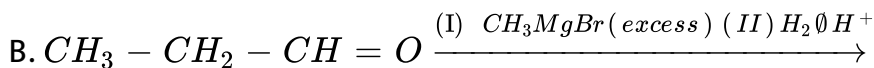
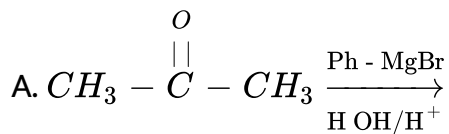
C. Both of these yeilds same product on treatment with aqueous KOH solution

D. Both of these yeilds same product on reduction

Answer: C

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13. In which of the following reactions, alcohol is formed as product gives positive iodoform test?



Answer: B

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14. A compound (X) of molecular formula C_3H_6O forms bisulphate complex, gives iodoform test but does not reduce Tollens reagent. (X) on reaction with CH_3MgBr / H_3O^+ gives a compound (Y) that cannot

- A. give red colour with Cerium Ammonium Nitrate (CAN)
- B. give white turbidity immediately with Lucas reagent
- C. give iodoform test
- D. be dehydrated to alkene on reaction with heated Cu

Answer: C



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15. Select the correct statement(s) about clime tidine and rantitidine.

- A. These are antihistamine drugs
- B. These prevent the excess production of HCl in the stomach
- C. Both prevent the interaction between histamine and receptor of stomach wall
- D. All of the above are correct statements

Answer: D

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16. The energy of activation for a reaction is 100 KJ mol^{-1} . The presence of a catalyst lowers the energy of activation by 75%. What will be the effect on the rate of reaction at 20°C , other things being equal?

- A. increases by a factor of 2.34×10^{12}
- B. increases by a factor of 2.34×10^{10}

C. increases by a factor of 10^{15}

D. no effect

Answer: A



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17. If latent heat of fusion of ice is 80 cal per g at 0° , calculate molal depression constant for water.

A. 18.63

B. 186.3

C. 1.863

D. 0.1863

Answer: C



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18. For the gaseous reaction involving the complete combustion of iso-butane

A. $\Delta H = \Delta E$

B. $\Delta H > \Delta E$

C. $\Delta H = \Delta E = 0$

D. $\Delta < \Delta E$

Answer: D

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19. $HCN + H_2O \rightarrow [X] + NH_3$, $[X] \rightarrow [Y] + H_2O$ (Unbalanced equations)

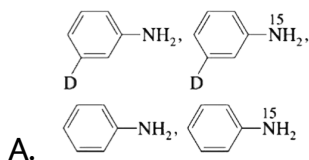
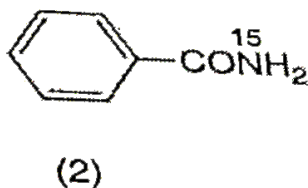
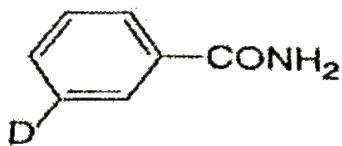
[Y] May be prepared by which one of the following methods?

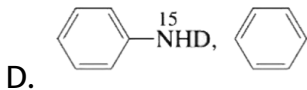
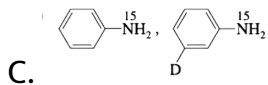
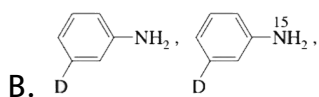
- A. By dehydration of Malonic acid with P_2O_5
- B. By thermal decomposition of carbon sub - oxide in air.
- C. By heating potassium hexacyanoferrate (II) with conc. H_2SO_4
- D. By the action of conc. HNO_3 on charcoal.

Answer: C

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20. What are the constituent amines formed when the mixture of I and II undergoes Hofmann's bromamide degradation?





Answer: B

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21. Calculate the pH of solution when 100 mL, 0.1 M CH_3COOH and 100 mL, 0.1 M $HCOOH$ are mixed together.

(Given : $K_a(CH_3COOH) = 2 \times 10^{-5}$), $K_a(HCOOH) = 6 \times 10^{-5}$)

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22. Resistance of a 0.1 M KCl solution in a conductance cell is 300 ohm and specific conductance of 0.1 M KCl is $.133 \times 10^{-2} \text{ ohm}^{-1}\text{cm}^{-1}$. The resistance of 0.1 M NaCl solution in the same cell is 400 ohm. The equivalent conductance of the 0.1 M NaCl solution (in $\text{ohm}^{-1}\text{cm}^2/\text{gmeq.}$) is

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23. How many dichloro products (including stereoisomers) will be formed when *R* - 2 - chloropentane reacts with Cl_2 in presence of UV radiation?

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24. The EAN of metal atoms in $[Fe(CO)_2(NO^+)_2]$ is 'x' and EAN of metal atoms in $Co_2(CO)_8$ is 'y'. The value of $x + y$ is

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25. An electron beam can undergo diffraction by crystals. The potential of 'V' volt should a beam of electrons be accelerated so that its wavelength becomes equal to 1.0\AA . The value of 'V' is Given:

$$\frac{h^2}{m_e \times e} = 3 \times 10^{-18} J^2 s^2 kg^{-1} \text{coulomb}^{-1}$$

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