CHEMISTRY

NTA MOCK TESTS ENGLISH

NTA JEE MOCK TEST 25

Chemistry

1. The IUPAC name of the complex $\left[Pt(NH_3)_2Cl(NH_2CH_3)\right]Cl$ is

A. Diamminechlorido (aminomethane) platinum (II) chloride

B. Diammine (methanamine) chloridoplatinum (II) chloride

C. Diamminechlorido (methanamine) platinum (II) chloride

D. Bisammine (methanamine) chloridoplatinum (II) chloride

Answer: C

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2. Consider the following reactions

(1) $(CH_3)_3CCH(OH)CH_3 \xrightarrow{\text{conc. } H_2SO_4}$

(2) $(CH_3)_2CHCH(Br)CH_3 \xrightarrow{conc. KOH}$

(3) $(CH_3)_2CHCH(Br)CH_3 \xrightarrow{(CH_3)_3CO^- K^+}$

(4) $(CH_3)_2\underset{\underset{\text{OH}}{|}}{C} - CH_2 - CHO \xrightarrow{\Delta}$

Which of these reaction(s) will produce Saytzeff product?

A. (1) , (2) and (4)

B. (3) only

C. (4) only

D. (2) and (4)

Answer: A

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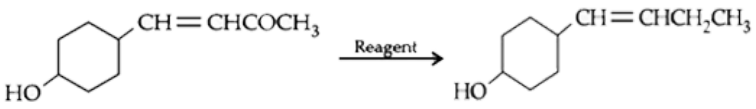
3. In the given transformation , which of the following is the most appropriate reagent ?



A. $Zn - Hg / HCl$

B. $Na, liq.\ NH_3$

C. $NaBH_4$

D. $NH_2 - NH_2, OH^-$

Answer: D

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4. For an electrochemical cell $Sn(s)Sn^{2+}(aq, 1M) \mid \left|pb^{2+}(Aq, 1M)\right|Pb(s)$ the ratio $\frac{[Sn^{2+}]}{[Pb^{2+}]}$

when this cell attians equilibrium is_____ (Given : $E^{\circ}_{sn^{2+}|Sn} = -0.14V, E_{pb^{2+}|Pb^{\circ}} = -0.13V, \frac{2.303RT}{F=0.06}$

A. 4.3

B. 1

C. -2.15

D. 2.14

Answer: D

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5. $NaClO_3$ is used even is spacecrafts to produce O_2 . The daily consumption fo pure O_2 by a person is 492 L at atm , 300k .How much amount of $NaClO_3$, in grams is required to produce O_2 for the daily consumption of a person at 1 atm 300K ?_____.

$NaClO_3(s) + Fe(s) \rightarrow O_2(g) + NaCl_s + FeO(s)$

$R = 0.082Latmmol^{-}K^{-1}$

A. 21.3

B. 1115

C. 2130

D. 4260

Answer: C

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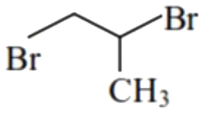
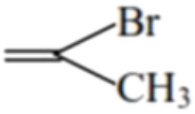
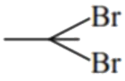
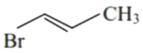
6. $1-$ Methylethylene oxide $\xrightarrow[HBr]{\text{excess}} X,$ Product 'X' will be-

A. 

B. 

C. 

D. 

Answer: A

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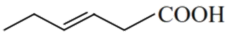
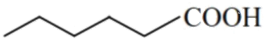
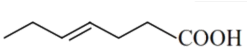
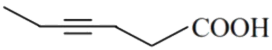
7. What is the final product of following reactions ?

$$Hex-3-\text{ynal} \xrightarrow[(i)\,PBr_3,\,(ii)\,Mg/\text{ether},\,(iii)\,CO_2/H_3O^+]{(i)\,NaBH_4}$$

A. 

B. 

C. 

D. 

Answer: D

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8. Solid N_2O_5 is

A. Ionic

B. Covalent

C. coordinate covalent

D. Metallic

Answer: A

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9. Which of the following is an amphoteric oxide ?

A. V_2O_5, Cr_2O_3

B. Mn_2O_7, Cr_2O_3

C. CrO, V_2O_5

D. V_2O_5, V_2O_4

Answer: A

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10. The dipole moments of $\mathbb{C}l_4, CHCl_3$ and CH_4 are in the order :

A. $CH_4 < \mathrm{CC}l_4 < CHCl_3$

B. $CHCl_3 < CH_4 = \mathrm{CCl}_4$

C. $CH_4 = \mathrm{CCl}_4 > CHCl_3$

D. $\mathrm{CCl}_4 < CH_4 < CHCl_3$

Answer: C

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11. A solution of m - chloroaniline, m- chlorophenol and m - chlorobenzoinc acid in ethyl acetate was extracted initially with a saturated solution of $NaHCO_3$ to give fraction A. The left over organic phase was extracted with dilute NaOH solution to give fraction B. The final organic layer was labelled as fraction C. Fractions A, B and C, contain respectively :

A. m - chloroaniline , m - chlorobenzoic acid and m - cholorophenol

B. m - cholorophenol , m - chlorobenzoic acid and m - chloroaniline

C. m - chlorobenzoic acid , m - chloroaniline and m - cholorophenol

D. m - chlorobenzoic acid , m - cholorophenol and m - chloroaniline

Answer: D

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12. In the following reactions , products (X) and (Y) respectively are

$$\underset{(\text{hot and conc})}{NaOH} + Cl_2 \rightarrow (X) + \text{ side products}$$

$$\underset{(\text{dry})}{Ca(OH)_2} + Cl_2 \rightarrow (Y) + \text{ side products}$$

A. $NaOCl$ and $Ca(ClO_3)_2$

B. $NaClO_3$ and $CaOCl_2$

C. $NaOCl$ and $Ca(OCl)_2$

D. $NaClO_3$ and $Ca(ClO_3)_2$

Answer: B

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13. The solution of Na_2CO_3 has PH

A. greater than 7

B. less than 7

C. equal to 7

D. equal to zero

Answer: A

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14. When 500 calories heat is given to the gas X in an isobaric process, its work done comes out as 142.8 calories . The gas X is

A. O_2

B. NH_3

C. He

D. SO_2

Answer: A

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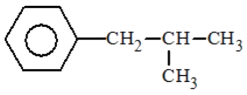
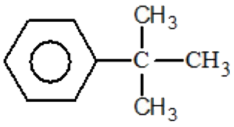
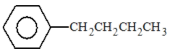
15.

+

$CH_3 - CH_2 - CH_2 - CH_2 - Cl \xrightarrow{AlCl_3}$ Hydrocarbon (X) major product X is

A. 

B. 

C. 

D. None of these

Answer: D

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16. Which of the following statement is correct ?

A. Gluonic acid is a dicarboxylic acid

B. Gluconic acid is a partial oxidation product of glucose

C. Gluconic acid can form cyclic (acetal/hemiacetal) structure

D. Gluconic acid is obtained by oxidation of glucose with HNO_3

Answer: B

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17. Kjeldahl's method cannot be used to estimate nitrogen for which of the following compounds ?

A. $CH_3CH_2 - C \equiv N$

B. $C_6H_5NH_2$

C. $C_6H_5NO_2$

D. NH_2CONH_2

Answer: C

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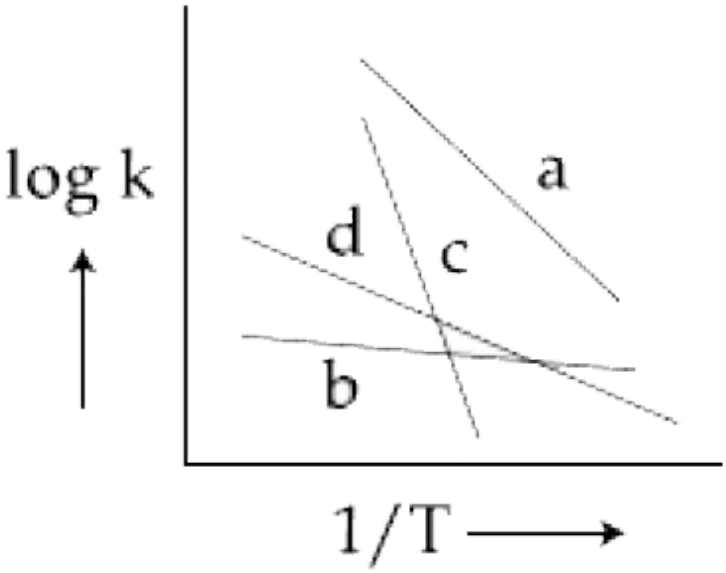
18. Consider the following plots of rate constant versus $\frac{1}{T}$ for four different reactions. Which of the following orders is correct for the

activation energies of these reactions ?



A. $E_c > E_a > E_d > E_b$

B. $E_b > E_a > E_d > E_c$

C. $E_a > E_c > E_d > E_b$

D. $E_b > E_d > E_c > E_a$

Answer: A

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19. Among the reactions (a) - (d) , the reactions (s) that does /do not occur in the blast furnace during the extraction of iron is / are

(a) $CaO + SiO_2 \rightarrow CaSiO_3$

(b) $3Fe_2O_3 + CO \rightarrow 2Fe_3O_4 + CO_2$

(c) $FeO + SiO_2 \rightarrow FeSiO_3$

(d) $FeO \rightarrow Fe + \frac{1}{2}O_2$

A. (c) and (d)

B. (a) and (d)

C. (a)

D. (b)

Answer: A

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20. A metal (A) on heating in nitrogen gas given compound B.B on treatment with H_2O givens a colourless gas which when passed throught $CuSO_4$ solution given a dark blue - violet coloured solution . A and B respectivley are :

A. Na and Na_3N

B. Na and $NaNO_3$

C. Mg and Mg_3N_2

D. Mg and $Mg(NO_3)_2$

Answer: C

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21. The major product [B] in the following sequence of reaction is having how many sp^3 hybridized Carbon atoms ?

$$\left(CH_3 - \underset{\underset{CH(CH_3)_2}{|}}{C} = CH - CH_2CH_3 \right) \xrightarrow[(ii)\, H_2O_2, OH^{\ominus}]{(i)\, B_2H_6} [A] \xrightarrow[\Delta]{\text{dil.}H_2SO_4} [B]$$

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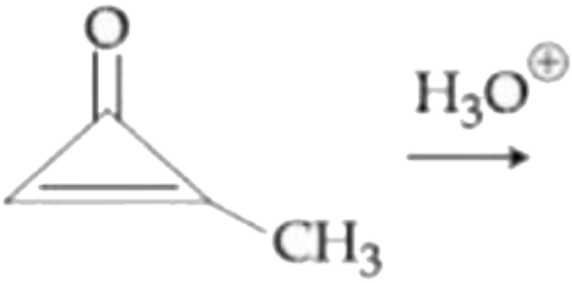
22. The major product in the following reaction is having how many pi electrons here ?



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23. Hydrogen has three isotopes (A),(B) and (C). If the number of neutron(s) in (A), (B) and (C) respectivley, are (x) ,(y) and (z), the sum of (x), (y) and (z) is

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24. The radius of the second Bohr orbit , in terms of the Bohr radius (a_0) of Li^{2+} is given as $\frac{xa_0}{y}$. Find the sum of x + y here ?

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25. Number of chiral centers in chloramphenicol is :

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