



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET TEST 103

Chemistry

1. The ratio of the speed of electron in first Bohr orbit of H-atom to speed of light in vacuum is

A. 137

B. 7.30×10^{-3}

C. 100

D. 10^{-2}

Answer: B



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2. The number of moles of $KMnO_4$ that will be needed to react with one mole of sulphite ion in acidic solution is

A. $2/5$

B. $3/5$

C. $4/5$

D. 1

Answer: A

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3. Which of the following statements is/are correct about hexagonal close packing ?

1. The coordination number is 8

2. It is ABAB type packing in which third layer is aligned with the first layer

3. Be, Mg, Mo etc. are found to have hcp structure

4. In hcp, atoms occupy 74% of the available space

A. 2,3

B. 3,4

C. 2,3,4

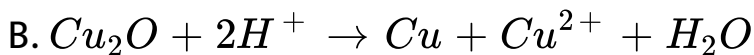
D. 1,2,3

Answer: C

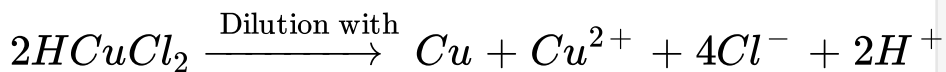


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4. Which of the following change represents a disproportionation reaction (s) :



C.



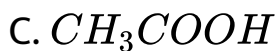
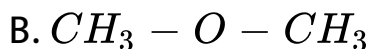
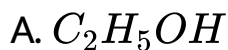
D. All of these

Answer: D



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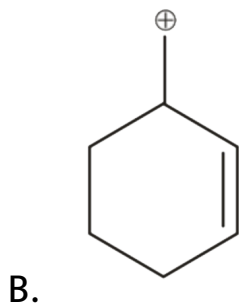
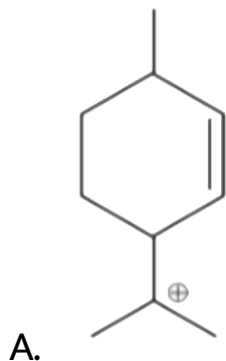
5. The compound which does not react with sodium is

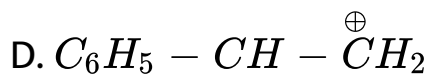
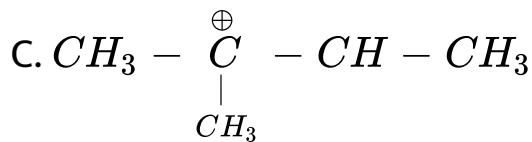


Answer: B

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6. Which of the following carbocation can not undergo rearrangement ?





Answer: C

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7. For two gases, A and B with molecular weights M_A and M_B . It is observed that at a certain temperature, T , the mean velocity of A is equal to the root mean square velocity of B. thus the mean velocity of A can be made equal to the mean velocity of B, if:

A. A is at temperature, T and B at T' , $T > T'$

B. A is lowered to a temperature $T_2 < T$ while B is at T

C. Both A and B are placed at lower temperature

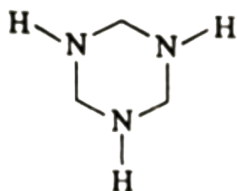
D. Both A and B are placed at lower temperature

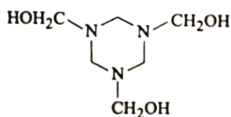
Answer: B

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8. Formaldehyde reacts with excess of ammonia to give

A. $CH_2 = NH$





C.

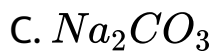
D. Hexamethylenetetramine

Answer: D



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9. When CO_2 is passed through brine solution , saturated with ammonia, white crystals precipitate out these crystals are of



D. NaHCO_3

Answer: D



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10. Which arrangement of electrons leads to ferromagnetism ?

A. $\uparrow \uparrow \uparrow \uparrow$

B. $\uparrow \downarrow \uparrow \downarrow$

C. $\uparrow \uparrow \uparrow \downarrow \downarrow$

D. None of these

Answer: A

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11. Which oxide of carbon is formed when malonic acid is warmed with P_2O_5 ?

A. Mixture of CO_2 and CO

B. C_3O_2

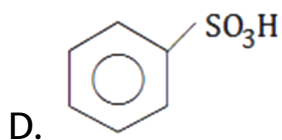
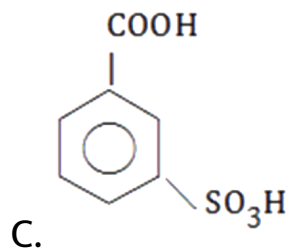
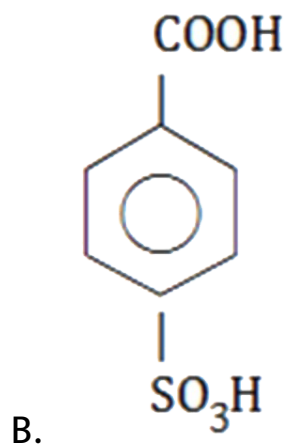
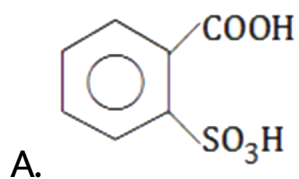
C. C_3O_4

D. only CO_2

Answer: B

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12. Saccharin is imide of



Answer: A



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13. AsF_5 reacts with XeF_4 to form an adduct. The shapes of cation and anion in the adduct are respectively.

- A. square planar, octahedral
- B. T-shaped, octahedral
- C. square pyramidal, octahedral
- D. square planar, trigonal bipyramidal

Answer: B



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14. For the gaseous reaction

$\text{C}_2\text{H}_4 + \text{H}_2$ The equilibrium constant, has the units

A. $\text{mol}^2 \text{dm}^{-3}$

B. $\text{dm}^3 \text{mol}^{-1}$

C. $\text{dm}^{-3} \text{mol}^{-1}$

D. $\text{mol} \text{dm}^{-3}$

Answer: B



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15. If the K_a value in the hydrolysis reaction, $B^+ + H_2O \rightarrow BOH + H^+$ is 1.0×10^{-6} , then the hydrolysis constant of the salt would be :

A. 10^{-6}

B. 10^{-7}

C. 10^{-8}

D. 10^{-9}

Answer: C



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16. Dehydration of alcohol into alkene by concentration H_2SO_4 involves which among the following reaction intermediate ?

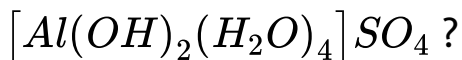
- A. Free radical
- B. Carbocation
- C. Carbanion
- D. Carbene

Answer: B



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17. What is the name of the complex



- A. Bis [Tetrahydroxodioxaluminatate (III) sulphate
- B. Dihydroxotetrahydridoaluminium (III) sulphate
- C. Tetraaquodihydroxoaluminium (III) sulphate
- D. Tetraaquolihydroxoaluminium (IV) sulphate

Answer: C



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18. Which of the following is an incorrect statement ?

- A. Fluorine is highly reactive
- B. HF molecules form intermolecular H-bond
- C. Halogens show only (-I) oxidation state
- D. Halogens are strong oxidizing agent

Answer: C

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19. Standard molar enthalpy of formation of CO_2 is equal to :

A. zero

B. the standard molar enthalpy of combustion of gaseous carbon

C. the sum of standard molar enthalpies of formation of CO and O_2

D. the standard molar enthalpy of combustion of carbon (graphite)

Answer: D

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20. The equivalent conductivity of $0.1M$ weak acid is 100 times less than that at infinite dilution. The degree

of dissociation of weak electrolyte at $0.1M$ is.

A. 100

B. 10

C. 0.01

D. 0.001

Answer: C



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21. H_2O has net dipole moment while BeF_2 has zero dipole moment because

A. F is more electronegativity than oxygen

B. Be is more electronegativity than oxygen

C. H_2O molecule is linear and BeF_2 is bent

D. BeF_2 molecule is linear and H_2O is bent

Answer: D



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22. 0.50g sample of impure $CaCO_3$ is dissolved in 50 ml of 0.0985 (N) HCl. After the reaction is complete, the excess HCl required 6 ml of 0.105N NaOH for neutralisation. The percentage purity of $CaCO_3$ in the sample is

A. 42.95

B. 429.5

C. 4.295

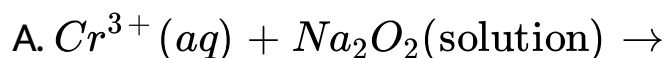
D. 21.86

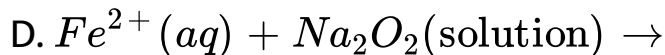
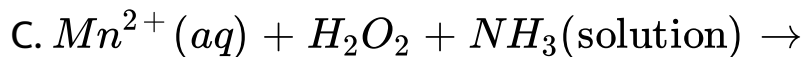
Answer: A



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23. In which of the following redox reaction precipitate is not formed?





Answer: A

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24. The boiling point of a glucose solution containing 12 g of glucose in 100 g of water is $100.34^\circ C$. Boiling point of water is $100^\circ C$. The molal elevation constant of water is

A. $0.51^\circ C / \text{Molal}$

B. $51^\circ C / \text{Molal}$

C. $5.1^{\circ}C / \text{Molal}$

D. None of these

Answer: A

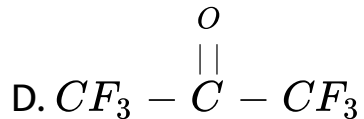
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25. Which carbonyl compound will not give addition reaction with water ?

A. CCl_3CHO

B. CF_3CHO

C. $\text{CH}_3 - \overset{\text{O}}{\parallel} \text{C} - \text{CH}_3$



Answer: C

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26. Phenol reacts with benzenediazonium cation at pH 7.5 to give

A. Aniline

B. Chlorobenzene

C. Benzene

D. Azo dye

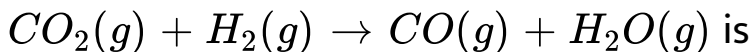
Answer: D



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27. The ΔH_f° for $CO_2(g)$, $CO(g)$ and $H_2O(g)$ are -395.5 , -110.5 and $-241.8 \text{ kJmol}^{-1}$ respectively.

The standard enthalpy change in (in kJ) for the reaction



A. 524.1

B. 41.2

C. -262.5

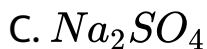
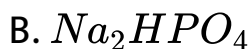
D. -41.2

Answer: B



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28. The percentage of Mg^{2+} ions in a solution can be tested by adding a solution of



Answer: B



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29. If the half-cell reaction $A = E^- \rightarrow A^-$ has a large negative reduction potential, it follows that .

- A. A is readily reduced
- B. A is readily oxidised
- C. A^- is readily reduced
- D. A^- is readily oxidised

Answer: D



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30. The hydrogen ion concentration in 0.2 M ethanoic acid

($K_a = 2 \times 10^{-5} \text{ mol dm}^{-3}$) is

A. 2×10^{-2}

B. 2×10^{-4}

C. 2×10^{-3}

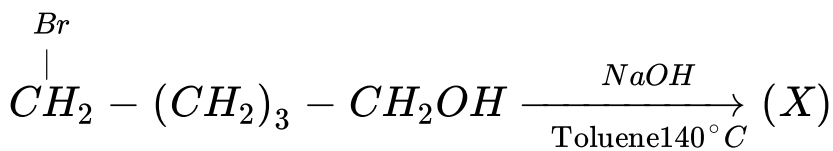
D. 2×10^{-5}

Answer: C

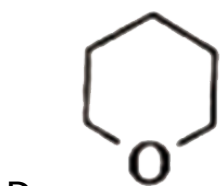
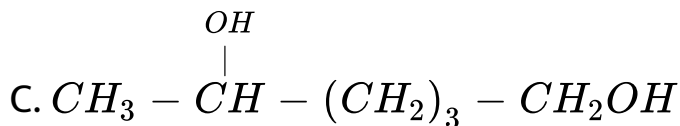
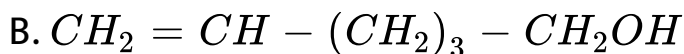
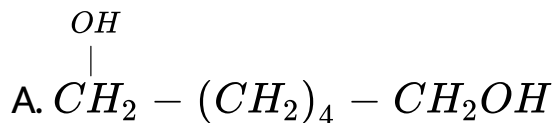


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31. In the given reaction



'X' will be



Answer: D



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32. The E_a of reaction in the presence of catalyst is 5.25kJ/mol in the absence of catalyst is 8.314kJmol^{-1} . What is the slope of the plot of $\ln k$ vs $\frac{1}{T}$ in the absence of catalyst.

$$(R = 8.314\text{Jk}^{-1}\text{mol}^{-1})$$

A. 100

B. -100

C. -1000

D. $+1000$

Answer: C



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33. Peptization is a process of :

- A. precipitating colloidal particles
- B. purifying colloidal particles
- C. dispersing the precipitate into colloidal state
- D. None of these

Answer: C



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34. Which of the following sets of quantum numbers represents an impossible arrangement?

A.
$$\begin{array}{cccc} n & l & m & s \\ 4 & 3 & -3 & 1/2 \end{array}$$

B.
$$\begin{array}{cccc} n & l & m & s \\ 4 & 1 & -1 & 1/2 \end{array}$$

C.
$$\begin{array}{cccc} n & l & m & s \\ 3 & 1 & -2 & 1/2 \end{array}$$

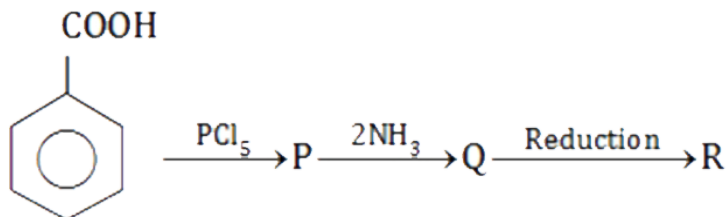
D.
$$\begin{array}{cccc} n & l & m & s \\ 4 & 3 & 0 & 1/2 \end{array}$$

Answer: C



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35. What is the end product in the following sequence of reactions ?



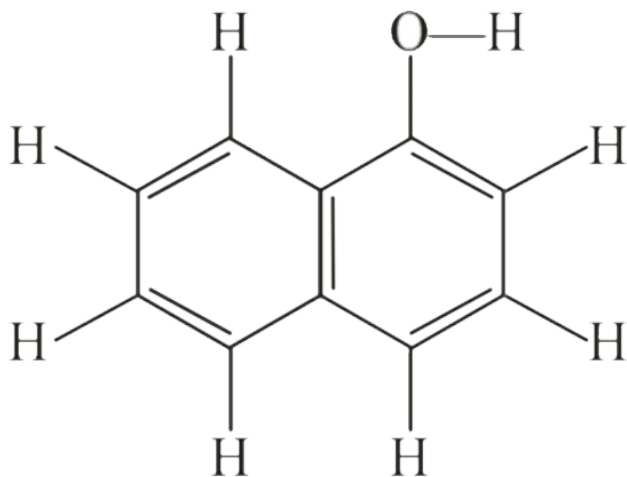
- A. Aniline
- B. Benzylamine
- C. Cyanobenzene
- D. Benzenediazonium chloride

Answer: B



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36. Number of π bonds and σ bonds in the following structure is



A. 6, 19

B. 4, 20

C. 5, 19

D. 5, 20

Answer: D



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37. In the complex $[Co(NH_3)_6][CdCl_x]$ the oxidation number of cobalt is +3 . The value of x is

A. 3

B. 4

C. 2

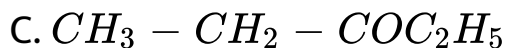
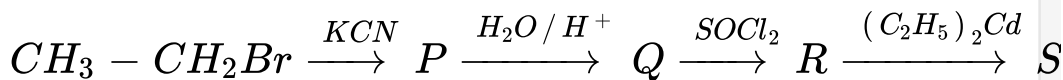
D. 5

Answer: D



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38. End product S of the reaction sequence is



Answer: C



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39. How many litres of water must be added to 1L of an aqueous solution of HCl with a pH of 1 to create an aqueous solution with pH of 2?

A. 5

B. 7

C. 9

D. 11

Answer: C



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40. Match the column I with column II and mark the appropriate choice.

	Column I		Column II
(p)	Sucrolose	(i)	Antihistamine
(q)	Chloroxylenol	(ii)	Artificial sweetener
(r)	Prontosil	(iii)	Antibacterial agent
(s)	Terfenadine	(iv)	Antiseptic

A. (p) - (i) , (q) - (ii), (r) - (iv) , (s) - (iii)

B. (p) - (iv) , (q) - (iii), (r) - (i) , (s) - (ii)

C. (p) - (ii) , (q) - (i), (r) - (ii) , (s) - (iv)

D. (p) - (ii) , (q) - (iv), (r) - (iii) , (s) - (i)

Answer: D



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41. Which one of the following is NOT correct for monosaccharides?

1. They are optically active polyhydroxy carbonyl compounds
2. Fructose is ketose sugar and hence it does not give red precipitate with Fehling solution
3. $\alpha - D(+)$ glucose and $\beta - D(+)$ glucose are anomers
4. Glucose and mannose are anomers

A. 1,2

B. 2,3

C. 2,4

D. 1,2,3,4

Answer: C



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42. Which of the following statement is correct about CO ?

A. It reduces aqueous solution of $PdCl_2$ to metallic

Pd

B. CO is neutral oxide and acts as a fuel

C. In laboratory it is prepared by dehydrating

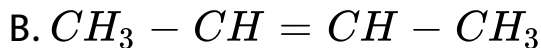
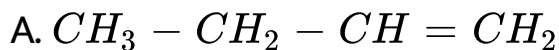
HCOOH with conc. H_2SO_4

D. All are correct

Answer: D

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43. Compound (X) of molecular formula C_4H_8 takes up one equivalent of hydrogen in presence of Pt to form another compound (Y), (X) on ozonolysis gives acetaldehyde as the only product. Compound (X) is



C. Cyclobutane

D. Cyclobutene

Answer: B



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44. Arrange reactivity of given compounds in decreasing order for electrophilic substitution reaction

1. Furan

2. Pyrrole

3. Thiophene

A. 1,2,3

B. 2,1,3

C. 2,3,1

D. 3,2,1

Answer: B



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45. Which of the following electropositive metal is used for the isolation of boron from B_2O_3 ?

A. *Al*

B. *Zn*

C. *Mg*

D. *Au*

Answer: C



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