



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 52

Chemistry

1. How many moles of lead (II) chloride will be formed from a reaction between 6.5 g of PbO and 3.2 g of HCl?

- A. 0.011
- B. 0.029
- C. 0.044
- D. 0.333

Answer: B

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2. Consider the following sets of quantum numbers.

$$\begin{array}{cccc} n & l & m & s \\ \text{(i)} & 3 & 0 & 0 & +1/2 \end{array}$$

$$\begin{array}{cccc} n & l & m & s \\ \text{(ii)} & 2 & 2 & 1 & +1/2 \end{array}$$

$$\begin{array}{cccc} n & l & m & s \\ \text{(iii)} & 4 & 3 & -2 & -1/2 \end{array}$$

$$\begin{array}{cccc} n & l & m & s \\ \text{(iv)} & 1 & 0 & -1 & -1/2 \end{array}$$

$$\begin{array}{cccc} n & l & m & s \\ \text{(v)} & 3 & 2 & 3 & +1/2 \end{array}$$

Which of the following sets of quantum number is not possible ?

A. (i) , (ii), (iii) and (iv)

B. (ii), (iv) and (v)

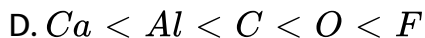
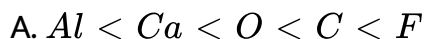
C. (i) and (iii)

D. (ii) , (iii) and (iv)

Answer: B

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3. Which one of the following arrangements represents the correct order of least negative to most negative electron gain enthalpy for C, Ca, Al, F and O ?



Answer: D

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4. Among the following ,which one is the wrong statement

- A. PH_5 and $BiCl_5$ do not exist
- B. $P\pi - d\pi$ bonds are presents in SO_2
- C. SeF_4 and CH_4 have same shape
- D. I_3^+ has bent shape

Answer: C

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5. A bubble of air is underwater at temperature $15^\circ C$ and the pressure 1.5 bar. If the bubble rises to the surface where the temperature is $25^\circ C$ and the pressure is 1.0 bar, what will happen to the volume of the bubble?

- A. volume will become greater by a factor of 1.6

B. volume will become greater by a factor of 1.1

C. volume will become smaller by a factor of 0.70

D. volume will become greater by a factor of 2.5

Answer: A

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6. Complete hydrolysis of cellulose gives:

A. D - ribose

B. D - glucose

C. L - glucose

D. D - fructose

Answer: B

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7. For the reaction $CH_4(g) + 2O_2(g) \rightleftharpoons CO_2(g) + 2H_2O(l)$:

($\Delta H = -170.8 \text{ kJ mol}^{-1}$). Which of the following statement is not true?

A. The reaction is exothermic

B. At equilibrium the concentrations of $CO_2(g)$ and $H_2O(l)$ are not equal

C. The equilibrium constant for the reaction is given by

$$K_p = \frac{P_{CO_2}}{P_{CH_4} \times P_{O_2}}$$

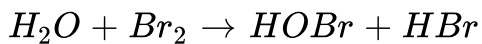
D. Addition of $CH_4(g)$ or $O_2(g)$ at equilibrium will cause a shift to the right .

Answer: C



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8. Which is the best description of the behaviour of bromine in the reaction given below



- A. proton acceptor only
- B. both oxidized and reduced
- C. oxidized only
- D. reduced only

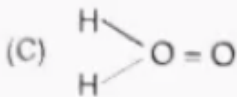
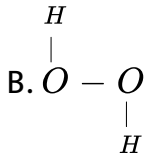
Answer: B



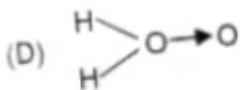
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9. Which of the following is a true structure of H_2O_2 ?

- A. H - O - O - H



C.



D.

Answer: B

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10. Match list-I with list-II for the composition of substances and select the correct answer using the code given below the lists

List-I

(Substances)

(A) Plaster of paris

(B) Epsomite

(C) Kieserite

(D) Gypsum

(1) A(i), B(ii), C(iii), D(iv)

List-II

(Composition)

(i) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$

(ii) $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$

(iii) $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$

(iv) $\text{MgSO}_4 \cdot \text{H}_2\text{O}$

A. 1 - (iii) , 2 - (iv) , 3 - (i) , 4 - (ii)

B. 1 - (ii) , 2 - (iii) , 3 - (iv) , 4 - (i)

C. 1 - (i) , 2 - (ii) , 3 - (iii) , 4 - (v)

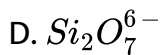
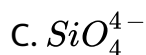
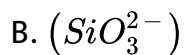
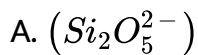
D. 1 - (iv) , 2 - (iii) , 3 - (ii) , 4 - (i)

Answer: B



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11. Which of the following anions is present in the chain structure of silicates?



Answer: B



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12. The names of some compounds are given. Which one not in the *IUPAC* system?

- A.
$$\begin{array}{ccccccc} & & & \text{CH}_3 & & & \\ & & & | & & & \\ \text{CH}_3\text{CH}_2 - & \text{CH}_2 - & \text{CH} - & \text{CH} - & \text{CH}_2\text{CH}_3 \\ & & | & & & & \\ & & \text{CH}_2\text{CH}_3 & & & & \\ & & \text{3-methyl-4-ethylheptane} & & & & \end{array}$$
- B.
$$\begin{array}{ccccccc} & & | & & | & & \\ & & \text{OH} & & \text{CH}_3 & & \\ & & \text{3-methyl-2-butanol} & & & & \\ \text{CH}_3 - & \text{CH}_2 - & \text{C} - & \text{CH} - & \text{CH}_3 \\ & & & & & & \end{array}$$
- C.
$$\begin{array}{ccccccc} & & || & & | & & \\ & & \text{CH}_2\text{CH}_3 & & & & \\ & & \text{2-ethyl-3-methylbut-1-ene} & & & & \end{array}$$
- D.
$$\text{CH}_3 - \text{C} \equiv \text{C} - \text{CH}(\text{CH}_3)_2$$

4-methyl-2-pentyne

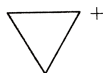
Answer: A

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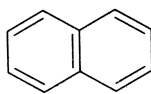
13.



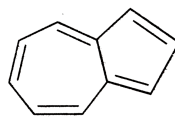
I



II

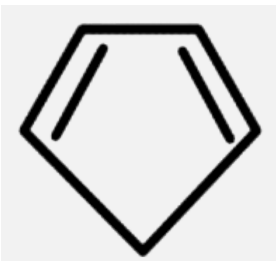
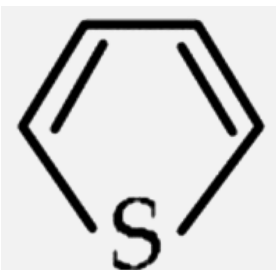
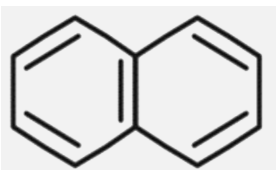


III



IV

Which of the following chemical systems is/are nonaromatic?



Answer: D

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14. Pick out the statement which is not true ?

- A. Tetrazine is harmful edible colour
- B. Alitame is an artificial sweetner
- C. BHT is an antioxidant
- D. Sodium alkyl sulphate is a cationic detergent

Answer: D

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15. The coordination number of a metal crystallizing in a hexagonal close-packed structure is

- A. 12
- B. 4
- C. 8

D. 6

Answer: A

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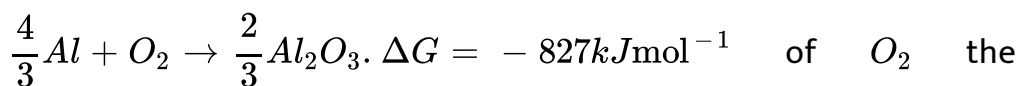
16. If $0.1M$ solution of glucose and $0.1M$ solution of urea are placed on two sides of the semipermeable membrane to equal heights, then it will be correct to say that

- A. there will be no net movement across the membrane
- B. glucose will flow towards urea solution
- C. urea will flow towards glucose solution
- D. water will flow from urea solution to glucose

Answer: A

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17. On the basis of the information available from the reaction



minimum emf required to carry out an electorlysis of Al_2O_3 is

$$\left(F = 96500Cmol^{-1}\right)$$

A. 2.14 V

B. 4.28 V

C. 6.42 V

D. 8.56 V

Answer: A

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18. When a biochemical reaction is carried out in laboratory from outside of human body in the absence of enzyme, the rate of

reaction obtained is 10^{-6} times, then activation energy of the reaction in the presence of enzyme is

A. $-6RT$

B. $+6RT$

C. $-6(2.303)RT$

D. $+6(2.303)RT$

Answer: C

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19. The coagulation value in millimoles per litre of the electrolyses used for the coagulation of As_2S_3 are given below:

I. $(NaCl) = 52$, II. $(BaCl_2) = 0.69$

III. $(MgSO_4) = 0.22$

The correct order of their coagulating power is

A. $I > II > III$

B. $II > I > III$

C. $III > II > I$

D. $III > I > II$

Answer: C



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20. The method of zone refining of metals is based on the principle of :

A. greater mobility of the pure metal than that of the impurity

B. higher melting point of the impurity than that of the pure metal

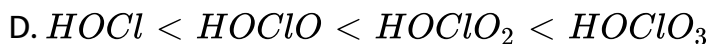
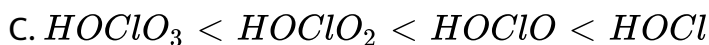
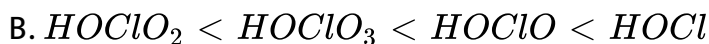
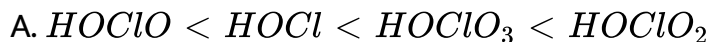
C. greater noble character of the solid metal than that of the impurity

D. greater solubility of the impurity in the molten state than in the solid

Answer: D

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21. Which of the following represents the correct order of acidity?



Answer: D



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22. In which one of the following species, the central atom has the type of hybridization which is not the same as that present in other three?

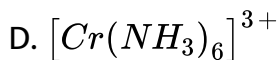
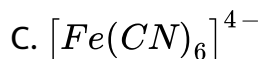
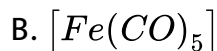
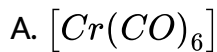


Answer: D



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23. Atomic numbers of Cr and Fe are respectively 24 and 26. Which of the following is paramagnetic with the spin of the electron?



Answer: D



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24. How many stereoisomers does this molecule have ?



A. 8

B. 2

C. 4

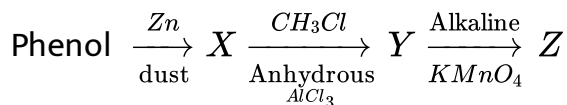
D. 6

Answer: C



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25. Consider the following reaction



The product Z is

A. benzaldehyde

B. benzoic acid

C. benzene

D. toluene

Answer: B



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26. Coordination number of Ni in $[Ni(C_2O_4)_3]^{4-}$ is:

A. 3

B. 6

C. 4

D. 2

Answer: B



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27. Electrolytic reduction of nitrobenzene in weakly acidic medium gives .

A. N - phenylhydroxylamine

B. nitrosobenzene

C. aniline

D. p - hydroxyaniline

Answer: C

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28. Which of the following is an amine hormone ?

A. Insulin

B. Progesterone

C. Thyroxine

D. Oxypurin

Answer: C

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29. Which one of the following polymers is prepared by condensation polymerization?

A. Teflon

B. Natural rubber

C. Styrene

D. Nylon - 6 , 6

Answer: D



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30. Gammexane is

A. bromobezene

B. benzyl chloride

C. chlorobenzene

D. benzene hexachloride

Answer: D

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31. An organic compound contains carbon, hydrogen and oxygen. Its elemental analysis gave C , 38.71 % and H , 9.67 %. The empirical formula of the compound would be :

A. CHO

B. CH_4O

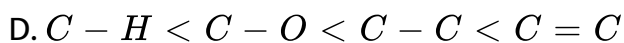
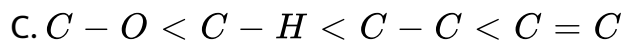
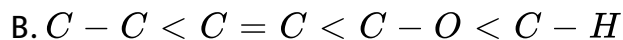
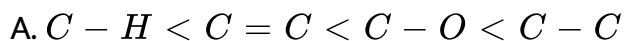
C. CH_3O

D. CH_2O

Answer: C

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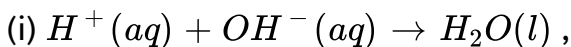
32. The correct order of increasing bond length of C - H ,C - O, C - C and C = C is



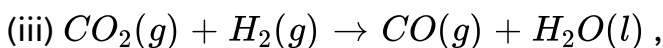
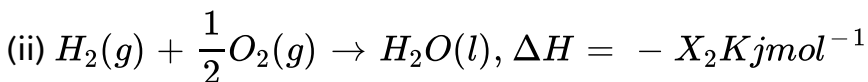
Answer: A

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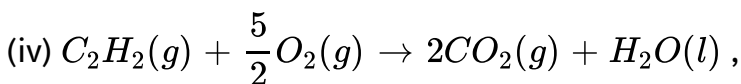
33. Consider the following reactions:



$$\Delta H = -X_1 \text{KJmol}^{-1}$$



$$\Delta H = -X_3 \text{KJmol}^{-1}$$



$$\Delta H = +X_4 \text{KJmol}^{-1}$$

Enthalpy of formation of $H_2O(l)$ is

A. $+X_3 \text{kJmol}^{-1}$

B. $-X_4 \text{kJmol}^{-1}$

C. $+X_1 \text{kJmol}^{-1}$

D. $-X_2 \text{kJmol}^{-1}$

Answer: D



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34. Which of the following pairs constitutes buffer?

A. HCl and KCl

B. HNO_2 and $NaNO_2$

C. $NaOH$ and $NaCl$

D. HNO_3 and NH_4NO_3

Answer: B



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35. Which of the following order is wrong with respect to property indicated?

A. Benzoic acid > phenol > cyclohexanol (acidic strength)

B. Aniline > cyclohexylamine > benzamide (basic strength)

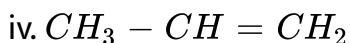
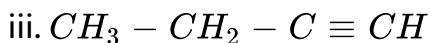
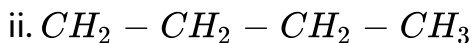
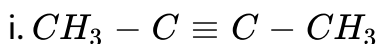
C. Formic acid > acetic acid > propanoic acid (acid strength)

D. Fluoroacetic acid > chloroacetic acid > bromoacetic acid
(acid strength)

Answer: B

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36. Which is the most suitable reagent among the following to distinguish compound (iii) from the rest of the compounds



A. Bromine in carbon tetrachloride

B. Bromine in acetic acid

C. Alk. $KMnO_4$

D. Ammoniacal silver nitrate

Answer: D

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37. An electrochemical cell is shown below
 $Pt, H_2(1\text{atm}) | HCl(0.1M) | CH_3COOH(0.1M) | H_2(1\text{atm})$, The
emf of the cell will not be zero, because

A. acids used in two compartments are different

B. e.m.f. depends on molarities of acids used

C. the temperature is constant

D. pH of 0.1 M HCl and 0.1 M CH_3COOH is not same

Answer: D

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38. Which of the following set has the strongest tendency to form anions?

A. Ga, Ni , Tl

B. Na, Mg , Al

C. N, O, F

D. V, Cr , Mn

Answer: C

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39. The most convenient method to protect the bottom of the ship made of iron is

- A. coating it with red lead oxide
- B. white tin plating
- C. connecting it with Mg block
- D. connecting it with Pb block

Answer: B

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40. If there is no rotation of plane polarized light by a compound in a specific solvent, through to be chiral, it may mean that:

- A. the compound is certainly meso
- B. there is no compound in the solvent

C. the compound may be a racemic mixture

D. the compound is certainly a chiral

Answer: A

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41. Ethylene oxide when treated with Grignard reagent yields

A. primary alcohol

B. secondary alcohol

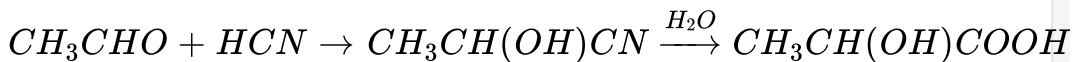
C. tertiary alcohol

D. cyclopropyl alcohol

Answer: A

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42. In the reaction



an asymmetric carbon is generated. The acid obtained would be

- A. d - isomer
- B. L - isomer
- C. 50 % D + 50% L - isomer
- D. 20% D + 80% L - isomer

Answer: C

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43. The first and second dissociation constant of an acid H_2A are 1.0×10^{-5} and 5.0×10^{-10} respectively. The overall dissociation constant of the acid will be

A. 5.0×10^{-5}

B. 5.0×10^{15}

C. 5.0×10^{-15}

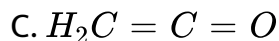
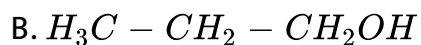
D. 0.2×10^5

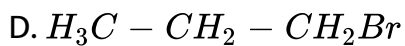
Answer: C



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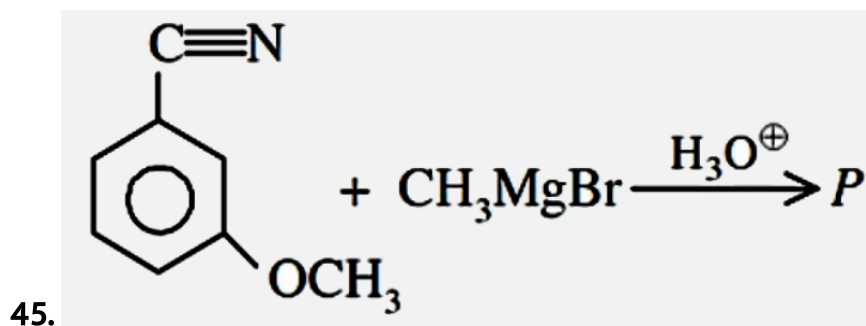
44. Which of the following compounds shall not produce propene by reaction with HBr followed by elimination or direct only elimination reaction?



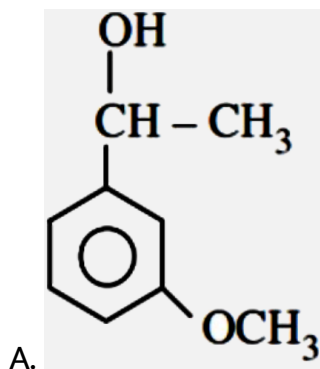


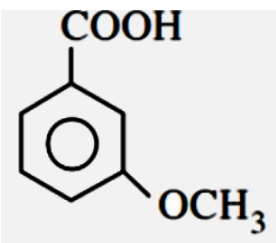
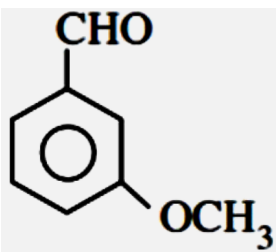
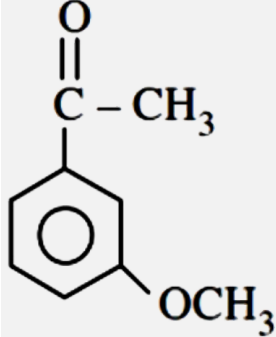
Answer: C

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Product P in the above reaction is





Answer: B

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