



## CHEMISTRY

### BOOKS - NTA MOCK TESTS

#### NTA NEET SET 66

#### Chemistry

1. How many orbitals in total are associated with 4<sup>th</sup> energy level?

A. 4

B. 9

C. 16

D. 7

**Answer: C**



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2. How many number of molecules and atoms respectively are present in 2.8 liters of a diatomic gas at STP ?

A.  $6.023 \times 10^{23}$ ,  $7.5 \times 10^{23}$

B.  $6.023 \times 10^{23}$ ,  $15 \times 10^{22}$

C.  $7.5 \times 10^{22}$ ,  $15 \times 10^{22}$

D.  $15 \times 10^{22}$ ,  $7.5 \times 10^{23}$

**Answer: C**

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3. Ice floats on water because

A. solids have lesser density than liquids

- B. it has open cage like structure in which lesser molecules are packed per mL than water
- C. of hydrogen bonding ice is lighter than water
- D. when ice is formed water , molecules come closer and start floating

**Answer: B**

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4. which of the following statemets is not true about the hexagonal close packing ?

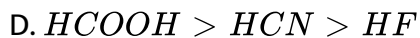
- A. In hcp , atoms occupy 74% the available space
- B. It is AB AB type packing in which third layer is aligned with the first layer
- C. Be, Mg, Mo etc. are found to have hcp structure
- D. The coordination number is 6

**Answer: D**



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5. Equimolar solution of HF, HCOOH and HCN at 298 K have the values of  $K_a$  as  $6.8 \times 10^{-4}$ ,  $1.8 \times 10^{-4}$  and  $4.8 \times 10^{-9}$  respectively, what will be the order of their acidic strength ?



**Answer: B**



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6. Which of the following statements is not true regarding molecular orbital theory?

A. The atomic orbital molecular orbitals

B. An atomic orbital is monocentric while a molecular orbital is polycentric

C. Bonding molecular orbital has higher energy than antibonding molecular orbital

D. Molecular orbitals like atomic orbitals obey Aufbau principle for filling of electrons

**Answer: B**



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7. At dynamic equilibrium the reaction on both sides occur at the same rate and the mass on both sides of the equilibrium does not undergo any

change. This condition can be achieved only when the value of  $\Delta G$  is

- A. positive
- B. negative
- C. zero
- D. can be any of these values

**Answer: C**

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**8.** How do we separate two sulphide ores by froth floatation method?

- A. By using excess of pine oil
- B. By adjusting proportion of oil to water or using depressant
- C. By using collectors and froth stabilisers like xanthates
- D. By using some solvent in which one of the sulphides is soluble

**Answer: B**



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9. Under what conditions a bimolecular reaction may be kinetically of first order ?

- A. when both reactants have same concentration
- B. when one of the reacting species is in large excess
- C. when the reaction is at equilibrium
- D. when the activation energy of reaction is less

**Answer: B**



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10. Which of the following products is formed when n - heptane is passed over ( $Al_2O_3 + Cr_2O_3$ ) catalyst at 773K?

- A. Benzene

B. Toluene

C. Polyheptane

D. Cycloheptane

**Answer: B**



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11. Which of the following statements is not correct regarding diamond and graphite ?

A. In diamond , each carbon atom is covalently bonded to four other carbon atoms

B. In graphite , each carbon atom is covalently bonded to three other carbon atoms in the same plane

C. The C - C bond length in graphite is intermediate between single and double bond distance



D. Diamond is a layered structure , the two layers joined by Van der Waals' forces

**Answer: D**

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12. Lactic acid and glycolic acid are the monomers used for preparation of polymer

A. nylon - 2 - nylon - 6

B. dextran

C. PHBV

D. buna - N

**Answer: B**

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13. The isotopes of hydrogen have different physical properties due to difference in mass. They have almost same chemical properties with a difference in their rates of reactions which is mainly due to

- A. their different enthalpy of bond dissociation
- B. different physical properties
- C. different atomic masses
- D. different electronic configurations

**Answer: A**



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14. The rate constant is given by the equation  $k = P \cdot Z e^{-E/RT}$ . Which factor should register a decrease for the reaction to proceed more rapidly?

A. T

B. Z

C. E

D. P

**Answer: C**



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15. After the reaction is over between adsorbed reactants, it is important to create space for the other reactant molecules to approach the surface and react. The process responsible for this is known as

A. sorption

B. desorption

C. physisorption

D. chemisorption

**Answer: B**



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16. Which type of crystals contains only one Bravais lattice ?

- A. Hexagonal
- B. Triclinic
- C. Rhombohedral
- D. Monoclinic

**Answer: D**



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17. The probability of finding out an electron at a point within an atom is proportional to the

- A. square of the orbital wave function i.e.,  $\psi^2$
- B. orbital wave function i.e.,  $\psi$

C. Hamiltonian operator i.e., H

D. principal quantum number i.e., n

**Answer: A**

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18. NaCl,  $MgCl_2$  and  $CaSO_4$  are known as

A. 1-1, 2 - 1 and 2 - 2 type electrolytes respectively

B. strong, weak and strong electrolytes respectively.

C. electrolytes with different value of A

D. electrolytes with same molar conductivity

**Answer: A**

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19. Formation of  $PCl_3$  is explained on the basis of what hybridisation of phosphorus atom?

A.  $sp^2$

B.  $sp^3$

C.  $sp^3d$

D.  $sp^3d^2$

**Answer: B**



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20. Formation of  $ClF_3$  from  $Cl_2$  and  $F_2$  is an exothermic process . The equilibrium system can be represented as

$Cl_{2(g)} + 3F_{2(g)} \rightleftharpoons 2ClF_{3(g)}$ ,  $\Delta H = -329kJ$  Which of the following

will increase quantity of  $ClF_3$  in the equilibrium mixture ?

A. Increase in temperature , decrease in pressure , addition of  $Cl_2$

- B. Decrease in temperature and pressure addition of  $ClF_3$
- C. Increase in temperature and pressure , removal of  $Cl_2$
- D. Decrease in temperature , increase in pressure , addition of  $F_2$

**Answer: D**

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21. A compound contains atoms X,Y and Z . The oxidation number of X is +2 , Y is +5 and Z is -2 . The possible formula of the compound is

- A.  $XYZ_2$
- B.  $Y_2(XZ_3)_2$
- C.  $X_3(YZ_4)_2$
- D.  $X_3(Y_4Z)_2$

**Answer: C**

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22. How much metal will be deposited when a current of 12 ampere with 75% efficiency is passed through the cell for 3 h? (Given:  $Z = 4 \times 10^{-4}$ )

A. 32.4 g

B. 38.8 g

C. 36.0 g

D. 22.4 g

**Answer: B**



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23. Sulphur dioxide causes

I. respiratory diseases in human beings.

II. Red haze in the traffic

III. Irritation of the eyes.

The correct option is

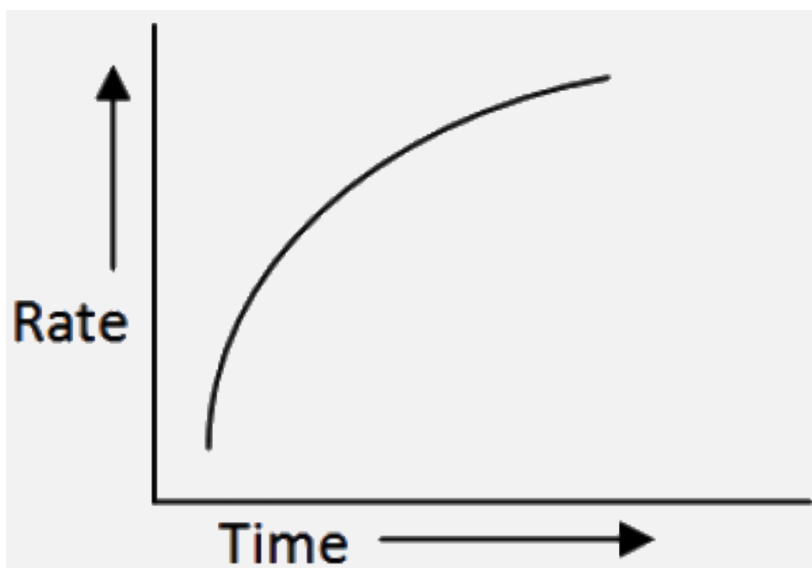


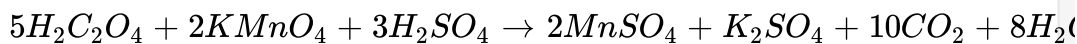
- A. Both I and II
- B. Both II and III
- C. Both I and III
- D. I, II and III

**Answer: C**

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24. The rate of oxidation of oxalic acid by acidified potassium permanganate is shown in the given graph.





The type of catalyst shown by such reaction is

A. heterogeneous catalysis

B. induced catalysis

C. auto - catalysis

D. negative catalysis

**Answer: C**



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25. Chlorination of methane does not occur in dark because

A. methane can form free radicals in presence of sunlight only

B. to get chlorine free radicals from  $Cl_2$  molecules energy is required.

It cannot happen in dark

C. substitution reaction can take place only in sunlight and not in dark

D. termination step cannot take place in dark . It requires sunlight

**Answer: B**

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**26.** Presence of water can be tested with

A. adding a pinch of anhydrous copper sulphate which changes its colour from white to blue

B. by boiling and testing for the presence of  $H_2$  and  $O_2$

C. by seeing its coloured and transparency

D. by checking the production of lather when mixed with soap

**Answer: A**

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27. Alkyl halides are immiscible in water though they are polar because

- A. they react with water to give alcohols
- B. they cannot form hydrogen bonds with water
- C. C - X bond cannot be broken easily
- D. they are stable compounds and are not reactive

**Answer: B**



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28. Which one of the following statements is not true regarding ( + )

Lactose ?

- A. On hydrolysis , ( + ) lactose give equal amount of D( + ) glucose and D( + ) galactose
- B. ( + ) Lactose is a  $\beta$  - glucoside formed by the union of a molecule of D ( + ) glucose and a molecule of D ( + ) galactose

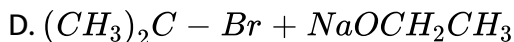
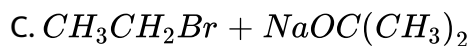
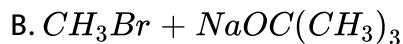
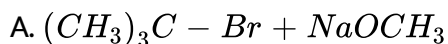
C. (+) Lactose is a reducing sugar and does not exhibit mutarotation

D. (+) Lactose,  $C_{12}H_{22}O_{11}$  contains 8 - OH groups

**Answer: C**

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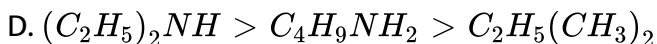
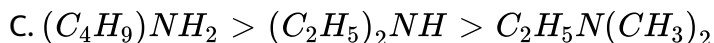
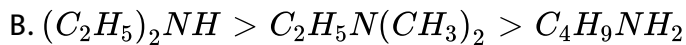
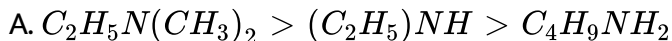
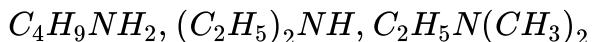
29. Ethers are prepared by the reaction of sodium alkoxides and alkyl halides. Which of the following reagents should be taken to prepare methyl tert-butyl ether ?



**Answer: B**

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30. The correct order of boiling points of the following isomeric amines is



Answer: C



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31. Among the elements with atomic number 9, 12, 16 and 36 which is highly electropositive ?

A. Element with atomic number 9

B. Element with atomic number 12

C. Element with atomic number 16

D. Element with atomic number 36

**Answer: B**

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**32.** One of the assumptions of kinetic theory of gases is that there is no force of attraction between the molecules of a gas.

State and explain the evidence that shows that the assumption is not applicable for real gases.

A. All gases will be ideal gases

B. the gases will never liquify when cooled and compressed

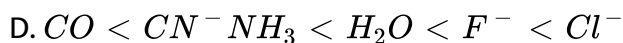
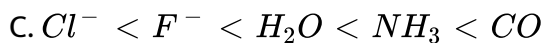
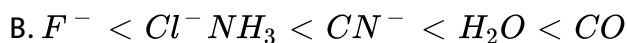
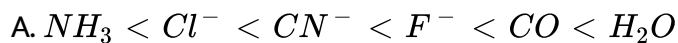
C. Gases will have definite volume

D. Gases will occupy a definite space

**Answer: B**

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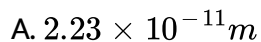
33. The increasing order of crystal field splitting strength of the given ligands is



Answer: C

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34. What will be the wavelength of an electron moving with 1/10th of velocity of light?





B.  $243 \times 10^{-11}m$

C. 0.243m

D.  $2.43 \times 10^{-4}m$

**Answer: A**

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**35.** Which of the following is not correctly matched with its uses?

A. Methanol : As a solvent for paints varnishes etc.

B. Ethanol : For denaturing spirit , in manufacture of formaldehyde

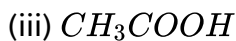
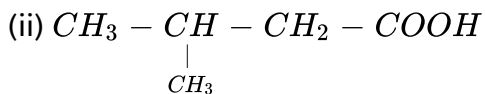
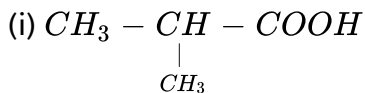
C. Ethers : To provide inert medium for chemical reactions , as  
anaesthetic

D. All are correctly matched

**Answer: B**

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36. Various products formed on oxidation of 2,5 dimethylhexan -3-one are



A. (i) and (iii)

B. (i), (ii) and (iii)

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

D. (iii) and (iv)

**Answer: C**



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37. Which of the following is not an application of electrochemical series ?

- A. To compare the relative oxidising and reducing power of substance
- B. To predict evolution of hydrogen gas on reaction of metal with acid
- C. To predict spontaneity of a redox reaction
- D. To calculate the amount of metal deposited on cathode

**Answer: D**

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**38.** Which of the following isomers will give white precipitate with  $BaCl_2$  solution ?

- A.  $[Co(NH_3)_5SO_4]Br$
- B.  $[Co(NH_3)_5Br]SO_4$
- C.  $[Co(NH_3)_4(SO_4)_2]Br$
- D.  $[Co(NH_3)_4Br(SO_4)]$

**Answer: B**

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39. Which of the following statements is not true ?

- A. Silicon carbide is a covalent crystal
- B. Molecular crystals are soft in nature
- C. In calcium fluoride structure coordination number of  $Ca^{2+}$  is 4
- D. Increase in radius ratio results in increase in coordination number

Answer: C

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40. At  $25^\circ C$ , the dissociation constants of  $CH_3COOH$  and  $NH_4OH$  in aqueous solution are almost same ( $10^{-5}$ ). If pH of same acetic acid solution is 3. The pH solution of  $NH_4OH$  of same conc. At the same temperature would be

A. 3.0

B. 4.0

C. 10.0

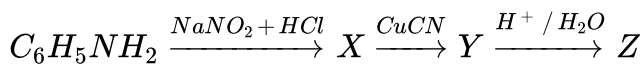
D. 11.0

**Answer: D**



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**41.** Identify 'Z' in the sequence



A.  $C_6H_5CN$

B.  $C_6H_5CONH_2$

C.  $C_6H_5COOH$

D.  $C_6H_5CH_2NH_2$

**Answer: C**



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42. Anisole on reaction with chloromethane in presence of anhydrous  $AlCl_3$  gives

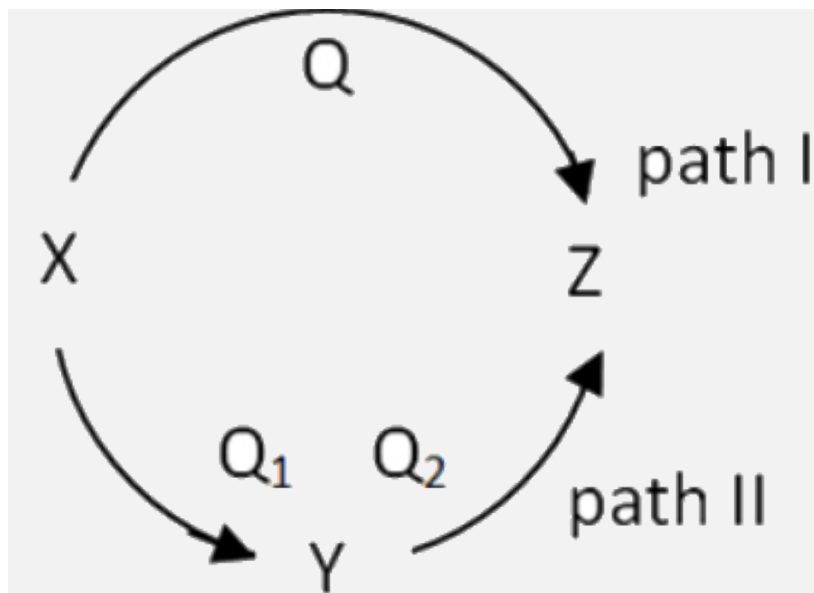
- A. o - methyl anisole and p - methoxy anisole
- B. p - methyl anisole and p - methoxy anisole
- C. o - methyl anisole and p - methyl anisole
- D. o - methoxy acetophenone and p - methoxy acetophenone

Answer: C



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43. A reaction proceeds through two paths I and II and convert  $X \rightarrow Z$



What is the correct relationship between  $Q$ ,  $Q_1$  and  $Q_2$  ?

A.  $Q = Q_1 \times Q_2$

B.  $Q = Q_1 + Q_2$

C.  $Q = Q_1 - Q_2$

D.  $Q = Q_1 / Q_2$

**Answer: B**



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44. 1.6 g of an organic compound gave 2.6 g of magnesium pyrophosphate . The percentage of phosphorus in the compound is

- A. 45.38 %
- B. 54.38
- C. 37.76 %
- D. 19.02 %

**Answer: A**



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45. What problem arises in using alitame as artificial sweetener ?

- A. It decomposes when added to the food items
- B. It provides a huge number of calories to the food
- C. It is difficult to control the sweetness of food while using it
- D. It increases the volume of the contents to a large extent



**Answer: C**



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