



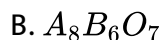
## CHEMISTRY

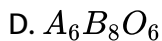
### BOOKS - NTA MOCK TESTS

#### NTA NEET SET 51

#### Chemistry

1. Oxygen atom forms FCC unit cell with 'A' atoms occupying all tetrahedral voids and 'B' atoms occupying all octahedral voids. If atoms are removed from two of the body diagonals then determine the formula of resultant compound formed .

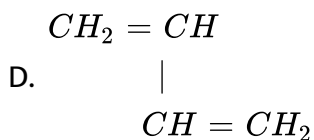
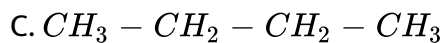
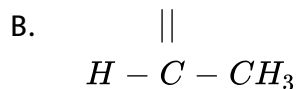
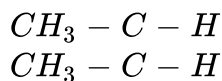
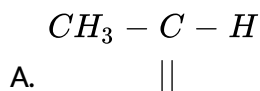




Answer: B

 Watch Video Solution

2. What happens when 2-butyne reacts with  $H_2$  in presence of Nickle bride or lindlar's catalyst ( $Pd/CaCO_3 - PbO$ )



Answer: A

 Watch Video Solution

3. The vapour pressure of water at  $20^\circ$  is  $17.5\text{mmHg}$ . If  $18\text{g}$  of glucose ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) is added to  $178.2\text{g}$  of water at  $20^\circ\text{C}$ , the vapour pressure of the resulting solution will be

A.  $17.675\text{ mmHg}$

B.  $15.750\text{ mmHg}$

C.  $16.500\text{ mmHg}$

D.  $17.325\text{ mmHg}$

**Answer: D**

 [Watch Video Solution](#)

4. Which of the following exists as covalent crystals in the solid state?

A. Sulphur

B. Phosphorus

C. Iodine

D. Silicon

**Answer: D**

 [Watch Video Solution](#)

5. The heat capacity of a bomb calorimeter is  $500\text{J}/^{\circ}\text{C}$ . When 0.1 g of a methane was burnt in this calorimeter, the temperature rose by  $2^{\circ}\text{C}$ .

The value of  $\Delta E$  per mole will be

A.  $+10\text{kJ}$

B.  $-10\text{kJ}$

C.  $+160\text{kJ}$

D.  $-160\text{kJ}$

**Answer: D**

 [Watch Video Solution](#)

6. In the isolation of metals, calcination process usually results in:

- A. Metal oxide
- B. Metal carbonate
- C. Metal sulphide
- D. Metal hydroxide

**Answer: A**



[Watch Video Solution](#)

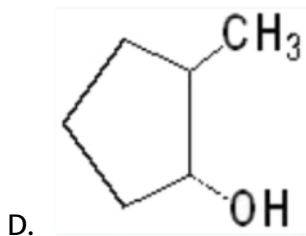
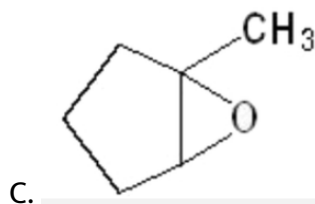
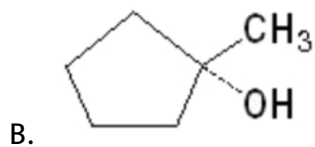
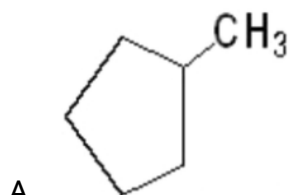
7. Potassium superoxide is used in oxygen cylinders in space and submarines because it

- A. Eliminates nitrogen
- B. Produce moisture
- C. Absorbs  $CO_2$
- D. Produce ozone

Answer: C

 Watch Video Solution

## 8. HYDROBORATION OXIDATION



**Answer: D**

 [Watch Video Solution](#)

**9.** For the reaction

$N_2 + 3H_2 \rightarrow 2NH_3$  The rate of change of concentration for hydrogen is

$0.3 \times 10^{-4} Ms^{-1}$  The rate of change of concentration of ammonia is :

A.  $-0.2 \times 10^{-4} Ms^{-1}$

B.  $0.2 \times 10^{-4} Ms^{-1}$

C.  $0.1 \times 10^{-4} Ms^{-1}$

D.  $0.3 \times 10^{-4} Ms^{-1}$

**Answer: B**

 [Watch Video Solution](#)

10. A bottle containing two immiscible liquids is given to you . They may be separated by using a

- A. Fractionating column
- B. Separating funnel
- C. Vacuum distillation
- D. Steam distillation

**Answer: B**



[Watch Video Solution](#)

11. Reaction of phenol with dil.  $HNO_3$  gives

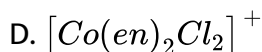
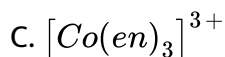
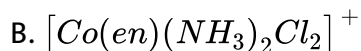
- A. p and m - nitrophenols
- B. o - and p - nitrophenols
- C. Picric acid
- D. o - and m - nitrophenols



**Answer: B**

 [Watch Video Solution](#)

**12.** Which of the following complex species is not expected to exhibit optical isomerism ?



**Answer: A**

 [Watch Video Solution](#)

**13.** The brown - ring complex compound of iron is formulated as

$[Fe(H_2O)_5(NO)]SO_4$ . The oxidation state of iron is :

A. 1

B. 2

C. 3

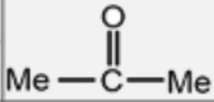

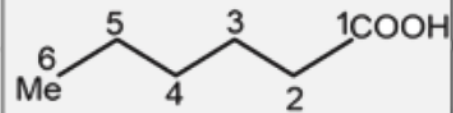
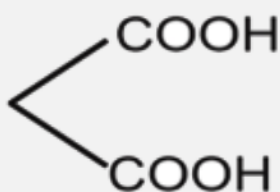
D. 0

**Answer: A**



**Watch Video Solution**

### 14. Match Column I with Column II

Column I	Column II
Structure	Common Name
a. 	p. Caproic acid
b. 	q. Carbinol
c. 	r. Acetone
d. $\text{CH}_3\text{OH}$	s. Valeric acid
e. $\text{PhOH}$	t. 
f. Malonic acid	u. Carboic acid

A.  $a \rightarrow r, b \rightarrow s, c \rightarrow p, d \rightarrow q, e \rightarrow u, f \rightarrow t$

B.  $a \rightarrow s, b \rightarrow p, c \rightarrow q, d \rightarrow u, e \rightarrow r, f \rightarrow t$

C.  $a \rightarrow p, b \rightarrow q, c \rightarrow u, d \rightarrow s, e \rightarrow r, f \rightarrow t$

D.  $a \rightarrow q, b \rightarrow u, c \rightarrow t, d \rightarrow r, e \rightarrow s, f \rightarrow p$

**Answer: A**



15. Alcoholic fermentation is brought about by the action of

A.  $CO_2$

B.  $O_2$

C. Invertase

D. Yeast

Answer: D



Watch Video Solution

16. What is the standard reducing potential ( $E^\circ$ ) for  $Fe^{3+} \rightarrow Fe$ ?

(Given that  $Fe^{2+} + 2e^- \rightarrow Fe$ ,  $E_{Fe^{2+}/Fe^\circ} = -0.47V$

$Fe^{3+} + e^- \rightarrow Fe^{2+}$ ,  $E_{Fe^{3+}/Fe^{2+}}^\circ = +0.77V$

A.  $-0.057V$

B.  $+0.30V$

C.  $-0.30V$

D.  $+0.057V$

**Answer: A**



[Watch Video Solution](#)

17. Approximate atomic weight of an element is 26.89. If its equivalent weight is 8.9, the exact atomic weight of element would be

A. 26.89

B. 8.9

C. 17.8

D. 26.7

**Answer: D**



[Watch Video Solution](#)

18. The half life for radioactive decay of  $^{14}\text{C}$  is 5730 years. An archaeological artifact containing wood had only 80 % of the  $^{14}\text{C}$  found in a living tree. Estimat the age of the sample.

A. 1845 years

B. 184.5 years

C. 1900 years

D. 190 years

**Answer: A**



[Watch Video Solution](#)

19. The type of isomerism observed in alkanes is

A. Metamerism

B. Chain isomerism

C. Position isomerism

D. Geometrical isomerism

**Answer: B**

 [Watch Video Solution](#)

20. What is the minimum pH required to prevent the precipitation of ZnS in a solution which is 0.01 M  $ZnCl_2$  and saturated with 0.1 M  $H_2S$ ?

$$K_{sp} \text{ of } (ZnS) = 10^{-21}, K_{a1} \times K_{a2}(H_2S) = 10^{-20}$$

A. 0

B. 1

C. 2

D. 4

**Answer: B**

 [Watch Video Solution](#)

21. Sodium chloride is an ionic compound whereas hydrogen chloride is Mainly covalent because

- A. Sodium is less reactive
- B. Hydrogen is non - metal
- C. Hydrogen chloride is a gas
- D. Electronegativity difference in the case of hydrogen and chlorine is less than 2.1

**Answer: B**

 [Watch Video Solution](#)

22. Which of the sulphide is yellow-

- A. ZnS
- B. CdS



C. NiS

D. PbS

**Answer: B**

 [Watch Video Solution](#)

23. The vapour pressure of pure benzene and toluene are 160 and 60 mm Hg respectively. The mole fraction of benzene in vapour phase in contact with equimolar solution of benzene and toluene is :

A. 0.073

B. 0.027

C. 0.27

D. 0.73

**Answer: D**

 [Watch Video Solution](#)

24. Clay is an example of

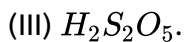
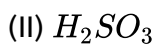
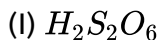
- A. Three dimensional silicates
- B. Chain silicates
- C. Cyclic silicates
- D. Sheet silicates

Answer: D



Watch Video Solution

25. Identify the correct sequence of increasing number of  $\pi$  – *bonds* in structures of the following molecules.



A.  $I < II < III$

B.  $II < III < I$

C.  $II < I < III$

D.  $I < III < II$

**Answer: B**

 [Watch Video Solution](#)

26. Zirconium phosphate  $[Zr_3(PO_4)_4]$  dissociates into three zirconium cations of charge +4 and four phosphate anions of charge -3 . If molar solubility of zirconium phosphate is denoted by  $S$  and its solubility product by  $K_{sp}$  then which of the following relationship between  $S$  and  $K_{sp}$  is correct ?

A.  $S = \{K_{sp}/6912\}^7$

B.  $S = \{K_{sp}/144\}^{1/7}$

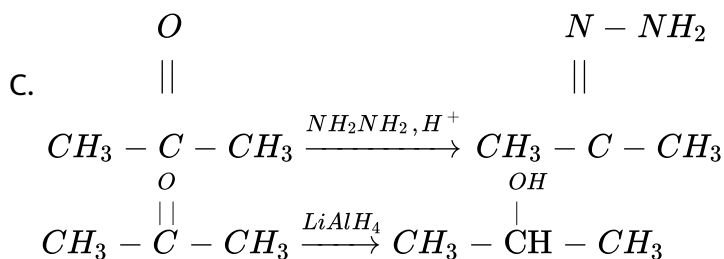
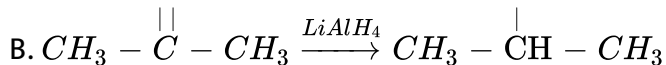
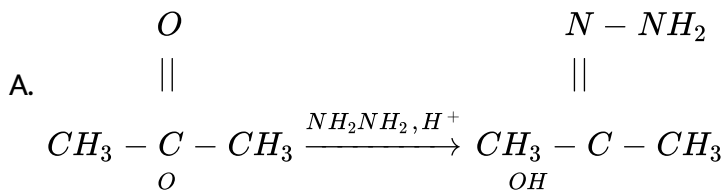
C.  $S = \left\{K_{sp}/(6912)^{1/7}\right\}$

D.  $S = (K_{sp}/6912)^{1/7}$

Answer: D

 Watch Video Solution

27. Which of the following is an example of nucleophilic addition ?



and

D. None of the two

Answer: C

 Watch Video Solution

28. Among the following, the essential amino acid is :

- A. Valine
- B. Alanine
- C. Serine
- D. Aspartic acid

**Answer: A**

 [Watch Video Solution](#)

29. For the reaction  $2NO_2(g) \rightleftharpoons 2NO(g) + O_2(g)$

$K_c = 1.8 \times 10^{-6}$  at  $184^\circ C$ ,  $R = 0.00831 kJ / (mol.K)$  when  $K_p$  and  $K_c$

are compared at  $184^\circ C$ , it is found

- A. Whether  $K_p$  is greater than less than or equal to  $K_c$  depends upon the total gas pressure
- B.  $K_p = K_c$

C.  $K_p$  is less than  $K_c$

D.  $K_p$  is greater than  $K_c$

**Answer: D**



**Watch Video Solution**

30. A compound 'A' formula of  $C_3H_6Cl_2$  on reaction with alkali can give 'B' of formula  $C_3H_6O$  or 'C' of formula  $C_3H_4$ . 'B' on oxidation gave a compound of the formula  $C_3H_6O_2$ . 'C' with dilute  $H_2SO_4$  containing  $Hg^{2+}$  ion gave 'D' of formula  $C_3H_6O$  which with bromine and alkali gave the sodium salt of  $C_2H_4O_2$ . Then 'A' is

A.  $CH_3CH_2CHCl_2$

B.  $CH_3CCl_2CH_3$

C.  $CH_2ClCH_2CH_2Cl$

D.  $CH_3CHClCH_2Cl$

**Answer: A**



Watch Video Solution

31. Which functional group participates in the disulphide bond formation in proteins?

- A. Thioester
- B. Thioether
- C. Thiol
- D. Thiolactone

Answer: C



Watch Video Solution

32. If  $\lambda_0$  and  $\lambda$  be the threshold wavelength and wavelength of incident light, the velocity of photoelectron ejected from the metal surface is :

A. 
$$\sqrt{\frac{2hc}{m} \left( \frac{\lambda_0 - \lambda}{\lambda \lambda_0} \right)}$$

B.  $\sqrt{\frac{2hc}{m}(\lambda_0 - \lambda)}$

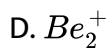
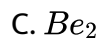
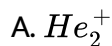
C.  $\sqrt{\frac{2h}{m}(\lambda_0 - \lambda)}$

D.  $\sqrt{\frac{2h}{m}\left(\frac{1}{\lambda_0} - \frac{1}{\lambda}\right)}$

**Answer: A**

 [Watch Video Solution](#)

**33.** Which of the following species is not expected to exist ?



**Answer: C**

 [Watch Video Solution](#)



34. In conversion of limestone to lime ,  $CaCO_3(s) \rightarrow CaO(s) + CO_2(g)$  the values of  $\Delta H^\circ$  and  $\Delta S^\circ$  are +179.1 KJ/mol , 160.2J/K respectively at 298 K and 1 bar. Assuming that  $\Delta H^\circ$  and  $\Delta S^\circ$  do not change with temperature , temperature above which conversion of limestone to lime will be spontaneous is

- A. 1008 K
- B. 1200 K
- C. 845 K
- D. 1118 K

**Answer: D**



[Watch Video Solution](#)

35. A gas is heated in such a way that its pressure and volume both become double. Now by decreasing temperature, some of air molecules were introduced into the container to maintain the increased volume and

pressure. Assuming  $1/4^{th}$  of the initial number of moles has been given for this purpose. By what fraction of temperature has been raised finally of initial absolute temperature.

A. 4 times

B.  $\frac{16}{5}$  times

C.  $\frac{4}{5}$  times

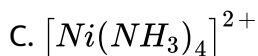
D.  $\frac{1}{5}$  times

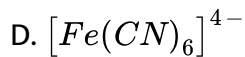
**Answer: B**



[Watch Video Solution](#)

**36.** The complex ion which has the highest magnetic moment among the following is





**Answer: A**

 [Watch Video Solution](#)

**37.** Which of the following species is not paramagnetic ?

A. CO

B.  $O_2$

C.  $B_2$

D. NO

**Answer: A**

 [Watch Video Solution](#)

**38.** Which of the following atoms has the highest first ionisation energy ?

A. K

B. Sc

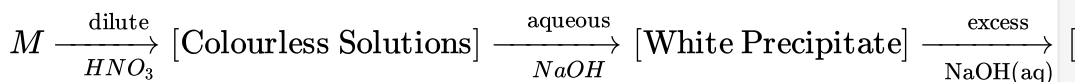
C. Rb

D. Na

**Answer: B**

 [Watch Video Solution](#)

**39.** A metal M and its compound can give the following observable changes in a consequence of reactions



A. Mg

B. Pb

C. Zn

D. Sn

**Answer: C**

 [Watch Video Solution](#)

**40.** The two bonds N = O and N - O in  $H_3CNO_2$  are of same bond length due to

- A. Inductive effect
- B. Hyperconjugation
- C. Electrometric effect
- D. Resonance effect

**Answer: D**

 [Watch Video Solution](#)

**41.** An isomer of  $C_6H_{14}$  forms three monochloro derivatives. The isomer may be- (Excluding stereo isomer)

A. neo - pentane

B. n - hexane

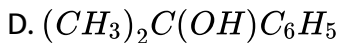
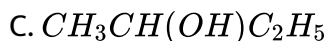
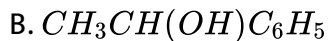
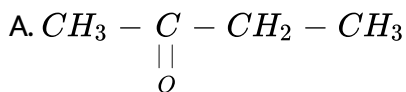
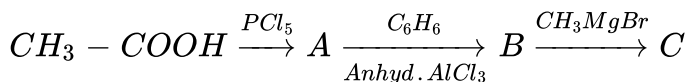
C. 2 , 3 - dimethylbutane

D. iso - hexane

**Answer: B**

 **Watch Video Solution**

**42.** Predict the product C in the following series of reactions ,



**Answer: D**



[Watch Video Solution](#)

43. Calculate the mass in gm of 2g atom of Mg-

A. 48 g

B. 84 g

C. 78 g

D. 87 g

**Answer: A**



[Watch Video Solution](#)

44. Antiseptic chloroxylenol is

A. 4 - chloro - 3, 5 - dimethylphenol

B. 3 - chloro - 4, 5 - dimethylphenol

C. 4 - chloro - 2, 5 - dimethylphenol

D. 5 - chloro - 3, 4 - dimethylphenol

**Answer: A**



**Watch Video Solution**

**45.** Account for the following:

(i)  $pK_b$  of aniline is more than that of methylamine.

(ii) Ethylamine is soluble in water whereas aniline is not.

(iii) Methylamine in water reacts with ferric chloride to precipitate hydrated ferrous oxide.

(iv) Although amino group is o- and p- directing in aromatic electrophilic substitution reactions, aniline on nitration gives a substantial amount of m-nitroaniline.

(v) Aniline does not undergo Friedel-Crafts reaction.

Diazonium salts of aromatic amines are more stable than those of aliphatic amines.

(vi) Gabriel phthalimide synthesis is preferred for synthesising primary amines.



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

B. (ii), (iii)

C. (i), (iii)

D. (i), (ii)

**Answer: B**



**Watch Video Solution**