



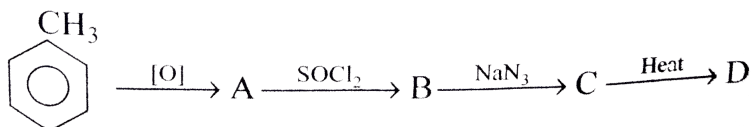
## CHEMISTRY

### BOOKS - AIIMS PREVIOUS YEAR PAPERS

#### AIIMS 2007

#### Chemistry

1. in the following sequence of reactions what is *D*



A. Primary amine

B. An amide

C. Phenyl isocyanate

D. A chain length hydrocarbon

**Answer: C**



**Watch Video Solution**

2. The coordination number in hcp is

A. 6

B. 12

C. 18

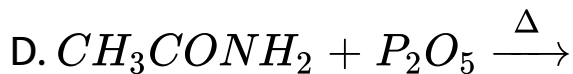
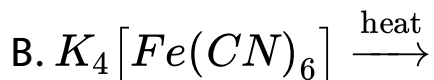
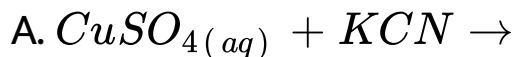
D. 24

**Answer: B**



**Watch Video Solution**

**3. Cyanogen gas is obtained in the reaction**



**Answer: A**



**Watch Video Solution**

4. The pH of the solution obtained on neutralisation of 40 mL 0.1 M NaOH with 40 ml 0.1  $MCH_3COOH$  is

A. 7

B. 8

C. 6

D. 3

**Answer: B**



**Watch Video Solution**

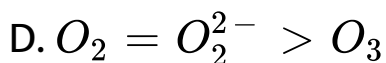
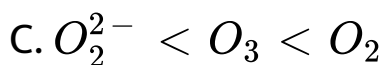
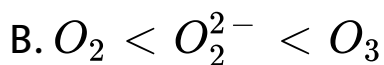
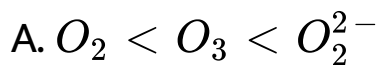
5. Inert gases are mixed in iodine vapours. Then there are \_\_\_\_\_ between them.

- A. H-bonding
- B. van der Waals forces
- C. Electrostatic forces
- D. Metallic bonds

**Answer: B**

 Watch Video Solution

6. Bond length order is



**Answer: A**

 Watch Video Solution

7. Largest difference in radii is found in case of the pair

A. Li, Na

B. Na, K

C. K, Rb

D. Rb, Cs

**Answer: B**



**Watch Video Solution**

8. 1 mol each of the following compounds is dissolved in 1 L of solution. Which will have the largest  $\Delta T_h$  value ?

A. HF

B. HCl

C. HBr

D. HI

**Answer: D**



**Watch Video Solution**



9.  $CH_3OC_2H_5$  and  $(CH_3)_3COCH_3$  are treated with hydroiodic acid. The fragments after reaction obtained are

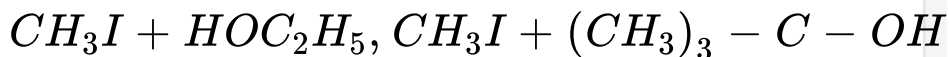
A.



B.  $CH_3OH + C_2H_5I, (CH_3)_3Cl + HOCH_3$

C.  $CH_3OH + C_2H_5, (CH_3)_3C - OH + CH_3I$

D.



.

**Answer: A**



**Watch Video Solution**

**10.** Carbon and CO gas are used to reduce which of the following pairs of metal oxides for extraction of metals ?

A. FeO, SnO

B. SnO, ZnO

C.  $BaO$ ,  $Na_2O_2$

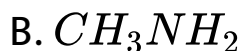
D.  $FeO_4ZnO$

Answer: D



View Text Solution

11. Which of the following will give  $N_2$  gas on treatment with nitrous acid ( $NaNO_2 + HCl$ ) ?



D. All will give  $N_2$

Answer: D

 [Watch Video Solution](#)

12. X-rays are emitted during

A.  $\alpha$ , n reaction

B. K-capture

C. n,  $\alpha$  reaction

D.  $\beta$ -emission

**Answer: C**

 [Watch Video Solution](#)

13. In P versus V graph, the horizontal line is found in which \_\_\_\_\_ exists.

A. Gas

B. Liquid

C. Equilibrium between gas and liquid

D. Super critical temperature.

**Answer: C**



**View Text Solution**

14. During estimation of nickel , we prepare nickel dimethylglyoxime, a scarlet red solid. This compound is \_\_\_\_\_.

A. ionic

B. covalent

C. metallic

D. non-ionic complex.

**Answer: D**



**Watch Video Solution**

15. Critical temperatures for A, B, C and D gases are  $25^{\circ}C$ ,  $10^{\circ}C$ ,  $-80^{\circ}C$  and  $15^{\circ}C$  respectively.

Which gas will be liquefied more easily?

A. A

B. B

C. C

D. D

**Answer: A**



**Watch Video Solution**

16. Which of the following metal ions will form complexes with the same magnetic moment and geometry irrespective of the nature of ligands ?



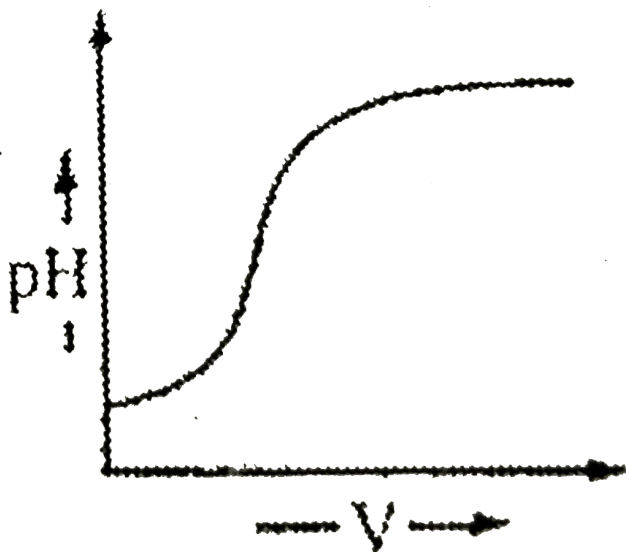
**Answer: C**



**Watch Video Solution**



17. During titration of acetic acid with aq. NaOH solution, the neutralisation graph has a vertical line. This line indicates



- A. alkaline nature of equivalence
- B. acidic nature of equivalence

C. neutral nature of equivalence

D. depends on experimental proceeding.

**Answer: A**



**Watch Video Solution**

**18.** Which of the following radioisotopes is used as anticancerous ?

A. Na-24

B. C-14

C. U-235

D. Co-60

**Answer: D**



**Watch Video Solution**

**19.**  $XeF_6$  on complete hydrolysis gives



**Answer: C**



**Watch Video Solution**

20. Calculate change in internal energy if

$$\Delta H = -92.2\text{kJ}, P = 40 \text{ atm and } \Delta V = -11.$$

A.  $-42\text{kJ}$

B.  $-88\text{kJ}$

C.  $+88\text{kJ}$

D.  $+42\text{kJ}$

**Answer: B**

 [Watch Video Solution](#)

21.  $\Delta H_{\text{fusion}}$  of a substance is 'x' and  $\Delta H_{\text{vap}}$  is 'y',

then  $\Delta H_{\text{sublimation}}$  will be

A.  $x + y$

B.  $x - y$

C.  $x/y$

D.  $y/x$

**Answer: A**

 [Watch Video Solution](#)

22. Decay constant of a radioactive substance is  $69.3 \text{ sec}^{-1}$ , find  $t_{1/16}$  of the same substance.

A.  $4 \times 10^{-2} \text{ sec}$

B.  $2 \times 10^{-2} \text{ sec}$

C.  $1 \times 10^{-2} \text{ sec}$

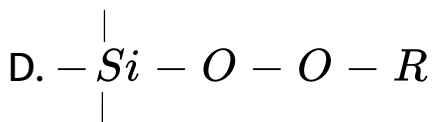
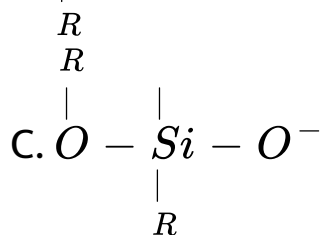
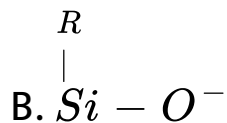
D. none of these

**Answer: A**



**Watch Video Solution**

23. The repeating structural unit of silicone is

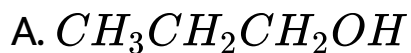


**Answer: B**



**Watch Video Solution**

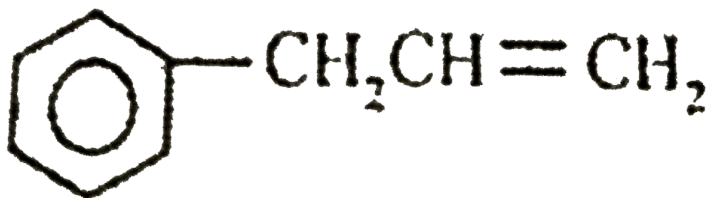
**24.** Propene on hydroboration and oxidation produces



Answer: A



Watch Video Solution

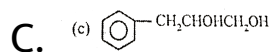
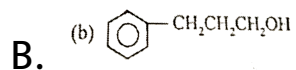
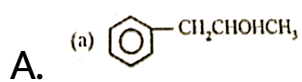


25.

on

mercuration and demercuration produces

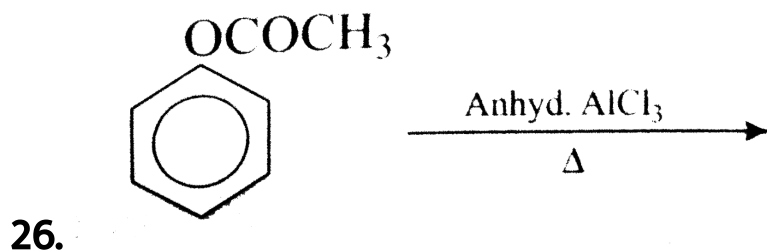




D. none of these

Answer: A

 Watch Video Solution



The product obtained *is / are*

- A. o-product
- B. m-product
- C. o- and p-products
- D. o-, m- and p-products.

**Answer: C**



**Watch Video Solution**

**27.** The element which is the most abundant in the earth crust is

- A. O

B. S

C. Al

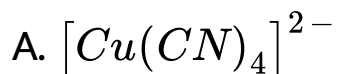
D. H

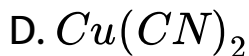
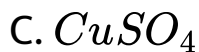
**Answer: A**



**Watch Video Solution**

**28.** Wavelength of red light is absorbed by the complex





**Answer: B**



**View Text Solution**

29. In the change



changes from

A. blue to green

B. blue to pink

C. pink to green

D. pink to blue

**Answer: B**



**View Text Solution**

**30.** Benzoic acid is treated with lithium aluminium hydride. The compound obtained is

A. benzaldehyde

B. benzyl alcohol

C. toluene

D. benzene

**Answer: B**



**Watch Video Solution**

**31. Chain transfer reagent is:**

A.  $CCl_4$

B.  $CH_4$

C.  $O_2$

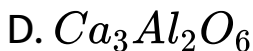
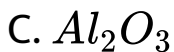
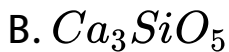
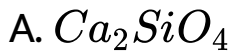
D.  $H_2$

**Answer: A**



**Watch Video Solution**

**32.** Among the following components of cement which is present in highest amount ?



**Answer: D**

 [Watch Video Solution](#)

**33.** A catalyst

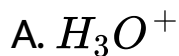
- A. changes the equilibrium constant
- B. lowers the activation energy
- C. increases the forward and backward reactions  
at different speeds
- D. follows same mechanism for the reaction

**Answer: B**

 [Watch Video Solution](#)



34. Which of the following does not contain a coordinate bond?

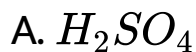


**Answer: C**



**Watch Video Solution**

35. Which of the following species participate in sulphonation of benzene ring ?



**Answer: B**



**Watch Video Solution**

36. Which of the following statement is true ?

- A. Trimethyl amines form a soluble compound with Hinsberg reagent and KOH.
- B. Dimethylamines react with KOH and phenol to form an azo dye.
- C. Methyl amine reacts with nitrous acid and liberates  $N_2$  form an azo dye.
- D. none of these

**Answer: C**



**Watch Video Solution**

37.  $\Delta S_{\text{surr}}$  for an exothermic reaction is

- A. always positive
- B. always negative
- C. zero
- D. may be positive or negative

**Answer: D**



[View Text Solution](#)

38. The vapour pressure of pure benzene at a certain temperature is 0.850 bar. A non-volatile,

non-electrolyte solid weighting  $0.5g$  when added to  $39.0g$  of benzene (molar mass  $78gmol^{-1}$ ). The vapour pressure of the solution then is  $0.845$  bar.

What is the molar mass of the solid substance?

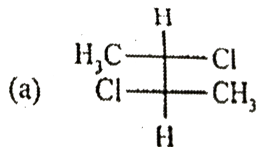
- A. 58
- B. 180
- C. 170
- D. 145

**Answer: C**

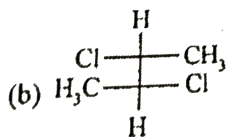


[Watch Video Solution](#)

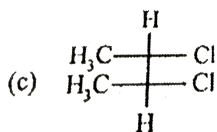
39. Which of the following is optically inactive ?



A.



B.



C.

D. none of these

Answer: C



Watch Video Solution

40. Which statement is true for ferrocene ?

A. All Fe-C are of equal length

B. C are  $sp^3$  hybridized

C. It was the first discovered organometallic  
compound

D. All of these

**Answer: D**



**View Text Solution**

**41.** Assertion : Copper sulphate solution is not stored in zinc vessel.

Reason : Zinc forms complex with  $CuSO_4$ .

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. If both assertion and reason are true but reason is not the correct explanation of assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false.



**Answer: A**



**Watch Video Solution**

**42. Assertion :** Benzene diazonium salt on boiling with water forms phenol.

**Reason :** C - N bond is polar.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false.

**Answer: B**



**Watch Video Solution**

**43.** Assertion : trans-butene on reaction with bromine forms racemic mixture.

Reason : trans-compound in trans addition forms two types of stereoisomers.

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. If both assertion and reason are true but reason is not the correct explanation of assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false.

**Answer: B**



**Watch Video Solution**

**44.** Assertion : Ozone is an allotrope of oxygen.

Reason : Oxygen is bluish colour liquid and in singlet state it is more paramagnetic.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false.

**Answer: C**



**Watch Video Solution**

**45.** Assertion (A) :  $SnI_4$  is an orange solid .

Reason (R) : The colour arises due to charge transfer .

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false.

**Answer: A**



**Watch Video Solution**

**46.** Assertion: Acetamide has more polar  $> C = O$  group than ethyl acetoacetate.

Reason :  $\ddot{N}H_2$  is more electron donating than  $OC_2H_5$

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. If both assertion and reason are true but reason is not the correct explanation of assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false.

**Answer: A**



**Watch Video Solution**

**47.** Assertion : Magnetic moment of Dy is the highest among lanthanoids.

Reason : Orbital motion contributes magnetic moment.

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. If both assertion and reason are true but reason is not the correct explanation of assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false.



**Answer: A**



**View Text Solution**

**48.** Assertion : C - O bond in metal carbonyl is long.

Reason : There is delocalisation of electrons from filled d orbitals into the empty orbitals on the CO ligands.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of

assertion

C. If assertion is true but reasonb is false

D. If both assertion and reason are false.

**Answer: A**



**View Text Solution**

**49.** Assertion : Chloral reacts with phenyl chloride to form DDT.

Reason : It is an electrophilic substitution reaction.

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. If both assertion and reason are true but reason is not the correct explanation of assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false.

**Answer: C**



**Watch Video Solution**

50. Assertion : Mixture of  $CH_3COOH$  and  $CH_3COONH_4$  is an example of acidic buffer.

Reason : Acidic buffer contains equimolar mixture of weak acid and its salt with weak base.

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. If both assertion and reason are true but reason is not the correct explanation of assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false.

**Answer: D**



**Watch Video Solution**

**51. Assertion :** Alkyl iodide can be prepared by treating alkyl chloride/bromide with NaI in acetone .

**Reason :** NaCl/NaBr are soluble in acetone while NaI is not .

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of

assertion

C. If assertion is true but reasonb is false

D. If both assertion and reason are false.

**Answer: C**



**Watch Video Solution**

**52.** Assertion:  $F$  is more electronegative than  $Cl$ .

Reason:  $F$  has high electron affinity than  $Cl$ .

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false.

**Answer: C**



**Watch Video Solution**

**53.** Assertion : Acetylene on reacting with sodamide gives sodium acetylide and ammonia.

Reason :  $sp$  hybridised carbon atoms of acetylene are considerably electronegative .

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. If both assertion and reason are true but reason is not the correct explanation of assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false.

**Answer: A**



**Watch Video Solution**



**54. Assertion(A) :** When sodium chloride dissolves in water, then  $Na^+$  and  $Cl^-$  ions leaving the crystal lattice acquire far greater freedom.

**Reason(R) :** In thermodynamic terms, the formation of solution occurs with a favourable change in energy i.e.,  $\Delta H$  has a high positive value and  $T\Delta S$  has a low negative value.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. If both assertion and reason are true but reason is not the correct explanation of

assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false.

**Answer: C**



**Watch Video Solution**

**55.** Assertion : Alpha( $\alpha$ ) – amino acids exist as internal salt in solution as they have amino and carboxylic acid groups in near vicinity.

Reason:  $H^+$  ion given by carboxylic group

( $-COOH$ ) is captured by amino group ( $-NH_2$ ) having lone pair of electrons.

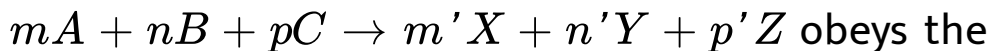
- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. If both assertion and reason are true but reason is not the correct explanation of assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false.

**Answer: A**



**Watch Video Solution**

**56.** Assertion : The kinetics of the reaction -



rate expression as -

$$\frac{dx}{dt} = k[A]^m[B]^n$$

Reason : The rate of reaction does not depend upon the concentration of C.

A. If both assertion and reason are true and

reason is the correct explanation of assertion

B. If both assertion and reason are true but

reason is not the correct explanation of

assertion

C. If assertion is true but reasonb is false

D. If both assertion and reason are false.

**Answer: A**



**View Text Solution**

**57.** Assertion : Nitrogen is less reactive than molecular oxygen.

Reason: Bond length of  $N_2$  is shorter than that of oxygen.

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. If both assertion and reason are true but reason is not the correct explanation of assertion
- C. If assertion is true but reason is false
- D. If both assertion and reason are false.

**Answer: B**



**Watch Video Solution**

**58.** Assertion : The lactic acid shows the geometrical isomerism.

Reason : Lactic acid has carbon-carbon double bond

.

A. If both assertion and reason are true and

reason is the correct explanation of assertion

B. If both assertion and reason are true but

reason is not the correct explanation of

assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false.

**Answer: D**



**Watch Video Solution**

**59.** Assertion (A) : The equilibrium constant is fixed and characteristic for any given chemical reaction at a specified temperature.

Reason (R) : The composition of the final equilibrium mixture at a particular temperature depends upon the starting amount of reactants.

A. If both assertion and reason are true and reason is the correct explanation of assertion



B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true but reason is false

D. If both assertion and reason are false.

**Answer: C**



**Watch Video Solution**

60. (A) The position of an element in periodic table after emission of one  $\alpha$  and two  $\beta$ -partilce remians unchanged.

(R ) Emission of one  $\alpha$  and two  $\beta$  particles gives isotope of the parent element which acquires same position in the periodic table.

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. If both assertion and reason are true but reason is not the correct explanation of assertion
- C. If assertion is true but reasonb is false
- D. If both assertion and reason are false.

**Answer: A**



**Watch Video Solution**