

## CHEMISTRY

# BOOKS - SUNSTAR CHEMISTRY (KANNADA ENGLISH)

## K - CET - CHEMISTRY - 2015

### Mcqs

1. After adding non-volatile solute freezing point of water decreases to  $-0.186^{\circ}C$ . Calculate  $\Delta T_b$  if

$$K_f = 1.86Kkgmol^{-1} \text{ and } K_b = 0.521Kkgmol^{-1}$$

A. 0.0186

B. 1.86

C. 0.0521

D. 0.521

**Answer: C**



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2. Which of the following compound of Xenon has pyramidal geometry ?

A.  $XeF_4$



**Answer: B**



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**3. Cryolite is**

A.  $Na_3AlF_6$  is used in the electrolytic refining of alumina.

B.  $Na_3AlF_6$  is used in the electrolysis of alumina for lowering the melting point and increasing the conductivity of alumina.

C.  $Na_3AlF_6$  is used in the electrolysis of alumina for lowering the melting point of alumina only.

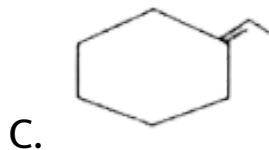
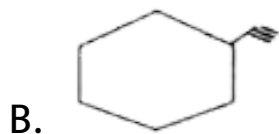
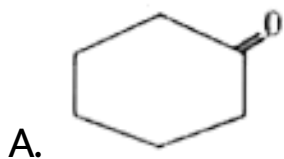
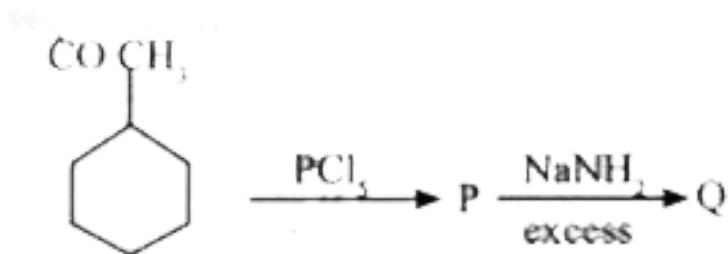
D.  $Na_3AlF_6$  is used in the electrolysis of alumina for decreasing electrical conductivity.

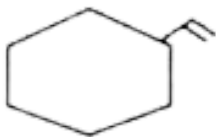
**Answer: B**



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4. Identify .Q. in the following sequency of reactions :





D.

**Answer: B**



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5. What amount of dioxygen (in gram) contains  $1.8 \times 10^{23}$  molecules ?

A. 96.0

B. 9.60

C. 0.960

D. 0.0960

**Answer: C**



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6. The pair of compound which cannot exist together in solution is

A.  $Na_2CO_3$  and  $NaOH$

B.  $NaHCO_3$  and  $Na_2CO_3$

C.  $NaHCO_3$  and  $H_2O$

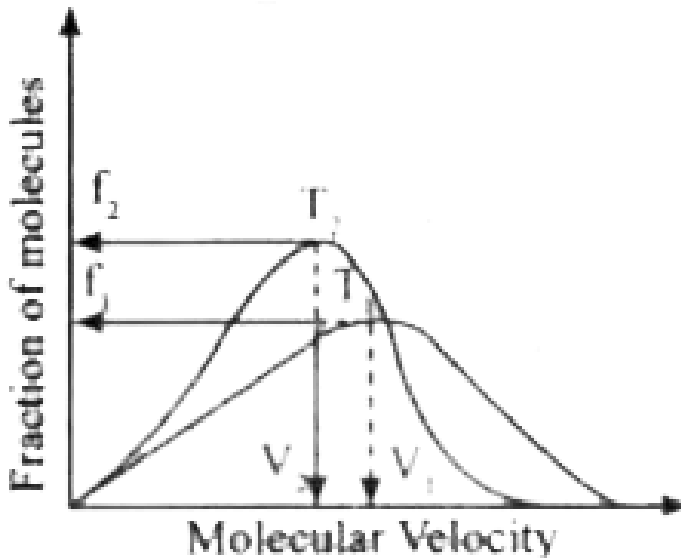
D.  $NaHCO_3$  and  $NaOH$

Answer: D



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7. Plot of Maxwell's distribution of velocities is gives below :



Which of the following is correct about this plot ?



A.  $V_1 < V_2$

B.  $T_1 > T_2$

C.  $f_1 > f_2$

D.  $T_1 < T_2$

**Answer: B**



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8. Arrange the following compounds in the increasing order of their acidic strength :

i. m - nitrophenol ii. m - cresol

iii. Phenol iv. m -chlorophenol

A.  $ii < iii < i < iv$

B.  $ii < iii < iv < i$

C.  $ii < iv < iii < i$

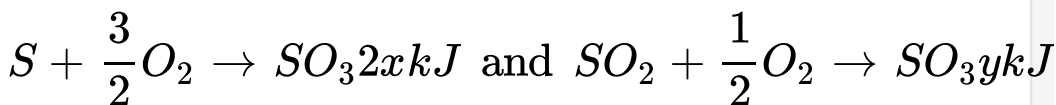
D.  $iii < ii < i < iv$

**Answer: B**



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9. In the reaction



heat of formation of  $SO_2$  is

A.  $2x + y$

B.  $2x - y$

C.  $x - y$

D.  $x - y$

**Answer:**



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**10. Which of the following is not true ?**

A. Vacomycin is a broad spectrum antibiotic.

B. Prontosil is not converted into sulphanilamide in the body.

C. Ampicillin is not a natural antibiotic.

D. Erythroycin is a bacteriosatatic antibiotic.

**Answer: A**



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11. Using MOT, compare  $O_2^+$  and  $O_2^-$  species and choose the incorrect option.

A. Both  $O_2^+$  and  $O_2^-$  are paramagnetic.

B.  $O_2^+$  is diamagnetic while  $O_2^-$  is paramagnetic.

C.  $O_2^-$  is less stable

D.  $O_2^+$  have higher bond order than  $O_2^-$

**Answer: B**



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12. Which of the following compound possesses the " C-H" bond with the lower bond dissociation energy ?

A. 2,2-dimethyl propane

B. n - pentane

C. Benzene

D. Toluene

**Answer: D**



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**13.** The correct statement is

A. There is minimum  $p\pi - p\pi$  back bonding in



B. There is maximum  $p\pi - p\pi$  back bonding in



C.  $BI_3$  is the weakest Lewis acid among the boron halides.

D.  $BF_3$  is the strongest Lewis acid among the other boron halides.

**Answer: B**



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14. Acetic acid is treated with  $Ca(OH)_2$  and the product so obtained is subjected to dry distillation.

The final product is

- A. ethanol
- B. propanone
- C. propanal
- D. ethanal

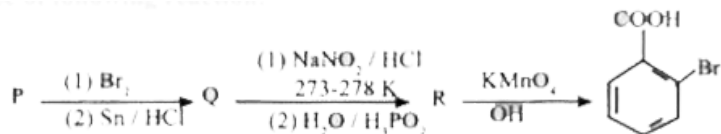
**Answer: B**



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15. In the sequence of following reaction



the starting compound .P. is

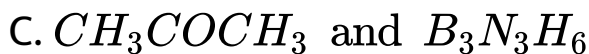
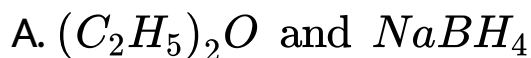
- A. p - nitro toluene
- B. o - bromo toluene
- C. m- nitro tolune
- D. o - nitro toluene

**Answer: A**



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16. An alkali metal hydride (NaH) reacts with diborane in .A. to give a tetrahedral compound .B. which is extensively used as reducing agent in organic synthesis. The compounds. The compound .A. and .B. respectively are

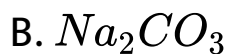
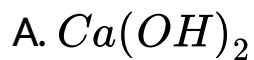


**Answer: A**



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17. Water softening by Clark.s process uses

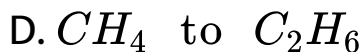
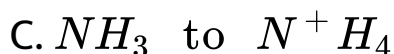
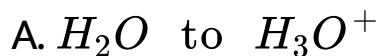


**Answer: A**



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18. One of the following conversion results in the change of hybridization and geometry :



**Answer: B**



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19. In presence of HCl,  $H_2S$  results the precipitation of Group-2 elements but not Group-4 elements during qualitative analysis. It is due to

- A. Lower concentration of  $H^+$
- B. Lower concentration of  $S^{2-}$
- C. Higher concentration of  $H^+$
- D. Higher concentration of  $S^{2-}$

**Answer: B**



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20. The two electron have the following set of quantum numbers :

$$P = 3, 2, -2, + \frac{1}{2}$$

$$Q = 3, 0, 0, + \frac{1}{2}$$

Which of the following statement is true ?

- A. P and Q represent same electron
- B. P has lesser energy than Q
- C. P has greater energy than Q
- D. P and Q have same energy

**Answer: C**



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21. Orlon has monomeric unit

A. Isoprene

B. Vinyl cyanide

C. Glycol

D. Acrolein

**Answer: B**



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22. Adenosine is an example of

- A. Nucleoside
- B. Pyrimidine base
- C. Purine base
- D. Nucleotide

**Answer: A**



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**23.** Adenosine is an example of

- A.  $PbSO_4$  on anode is oxidized to  $PbO_2$
- B.  $PbSO_4$  on cathode is oxidized to Pb



C.  $PbSO_4$  on cathode is reduced to Pb

D.  $PbSO_4$  on anode is reduced to Pb

**Answer: D**



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**24.** The unit cell with crystallographic dimensions,

$a \neq b \neq c$ ,  $\alpha = \gamma = 90$  and  $\beta \neq 90$  is

A. Tetragonal

B. Orthorhombic

C. Monoclinic

D. Triclinic

**Answer: C**



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25. Sodium metal crystallizes in B.C.C. lattice with edge length of  $4.29 \text{ \AA}$ . The radius of sodium atom is

A.  $1.857 \text{ \AA}$

B.  $2.147 \text{ \AA}$

C.  $1.601 \text{ \AA}$

D.  $2.857^\circ A$

**Answer: A**



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**26.** On heating with concentration NaOH solution in an inert atmosphere of  $CO_2$ , white phosphorous gives a gas. Which of the following statement is incorrect about the gas ?

A. Its solution in water decomposes in the presence of light

B. It is highly poisonous and has smell like rotten fish

C. It is more basic than  $NH_3$

D. It is less basic than  $NH_3$

**Answer: C**



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**27.** In the IUPAC name of product .Y. is

A. N - Methylpropan -2- amine

B. Butan -2 - amine

C. N -Isopropylmethanamine

D. N-Methylpropanamine

**Answer: A**



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**28.**  $H_2O_2$  cannot oxidise

A.  $KI$

B.  $O_3$

C.  $Na_2SO_3$

D.  $PbS$

**Answer: B**



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29. Which of the following will be able to show geometric isomerism ?

- A.  $MA_2B_2$  - Tetrahedral
- B.  $MA_2B_2$  - Square planar
- C.  $MA_2B_2$  - Tetrahedral
- D.  $MA_3B$  - Square planar

**Answer: B**



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**30.** Copper is extracted from pyrites by heating in a Bessemer converter. The method is based on the principle that

- A. Sulhur has less affinity for oxygen at high temperature.
- B. Copper has less affinity for oxygen than Sulphur at high temperature
- C. Iron has less affinity for oxygen than Sulphur at high temperature.

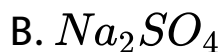
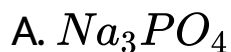
D. Copper has more affinity for oxygen than Sulphur at high temperature.

**Answer: D**



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**31.** The electrolyte having maximum flocculation value for  $AgI / Ag^+$  sol, is





D.  $\text{NaCl}$

**Answer: D**



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**32.** In the first order reaction, the concentration of the reactant is reduced to 12.5% in one hour. The half-life period of the reaction is:

A. 15 min

B. 30 min

C. 20 min

D. 3 hr

**Answer: C**



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**33.** 0.06% (w/v) aqueous solution of urea is isotonic with:

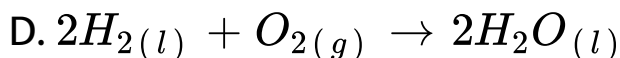
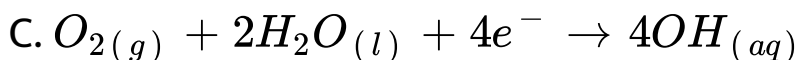
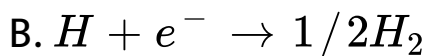
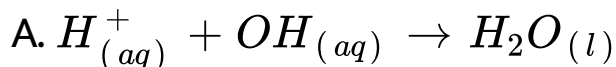
- A. 0.1 M glucose solution
- B. 0.01M glucose solution
- C. 0.6% glucose solution
- D. 0.06% glucose solution

**Answer: B**



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**34.** In  $H_2 - O_2$  fuel cell the reaction occurring at cathode is



**Answer: C**



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**35.** The distinguishing test between methanoic acid and ethanoic acid is

A. Sodium bicarbonate test

B. Esterification test

C. Tollen's test

D. Litmus test

**Answer: C**



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36. The hydrolysis of optically active 2-bromobutane with aqueous NaOH result in the formation of

A. (  $\pm$  ) butan - 2- ol

B. (  $\pm$  ) butan - 1- ol

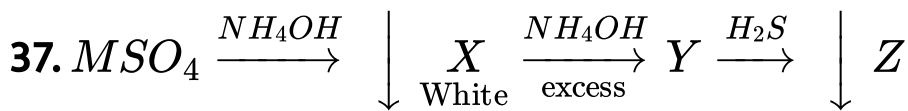
C. (-) butan - 2- ol

D. (+) butan - 2- ol

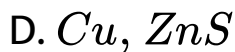
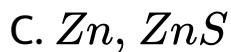
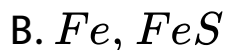
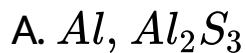
**Answer: A**



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Here M and Z are

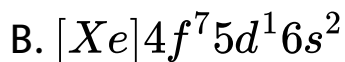
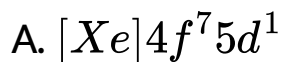


**Answer: C**



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38. The electronic configuration of  $Gd^{2+}$  is  
(at.no.Gd is 64)



**Answer: A**



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39. Number of possible alkynes with formula  $C_5H_8$

is

A. 5

B. 4

C. 3

D. 2

**Answer: C**



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40. Glycogen is

- A. Structurally similar to amylopectin but extensively branched
- B. Structurally very much similar to amylopectin
- C. a structural polysaccharide
- D. a polymer of  $\beta$ -D-glucose units.

**Answer: A**



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**41.** How many ions per molecule are produced in the solution when Mohr salt is dissolved in excess of water ?

A. 10

B. 6

C. 5

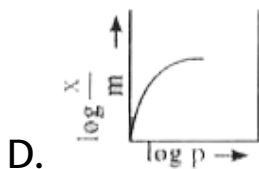
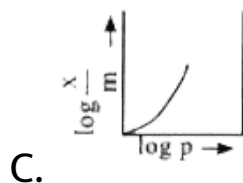
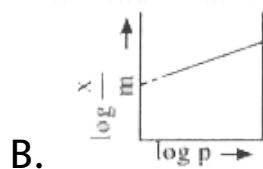
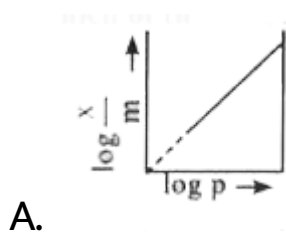
D. 4

**Answer: C**



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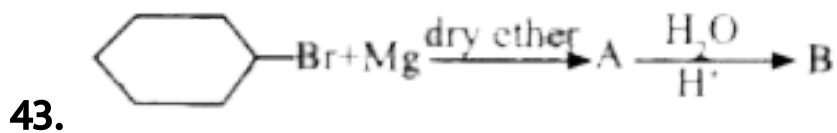
42. Which of the following curve is in accordance with Freundlich adsorption isotherm?



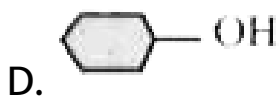
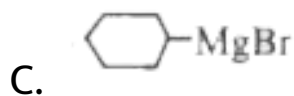
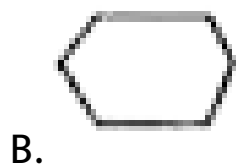
Answer: B



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The product . B. is

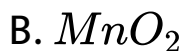
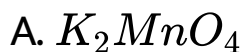


**Answer: B**



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44. On heating potassium permanganate, one of the following compound is not obtained :

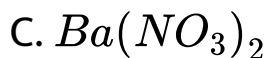
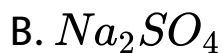
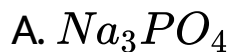


**Answer: C**



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45. The salt which responds to dilute and concentrated  $H_2SO_4$  is



**Answer: C**



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46. Half life period of a first order reaction is 10min.

Starting with initial concentration 12 M. The rate after 20 min is

A.  $0.0693 \times 4M\text{min}^{-1}$

B.  $0.0693 \times 3M\text{min}^{-1}$

C.  $0.693 \times 3M\text{min}^{-1}$

D.  $0.0693M\text{min}^{-1}$

**Answer: B**



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47. Which of the following aqueous solution has the highest freezing point ?

A.  $0.01MNa_2SO_4$

B.  $0.1MNaCl$

C.  $0.01MNaCl$

D. 0.1 M Sucrose

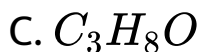
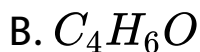
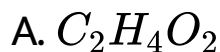
**Answer: C**



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48. 0.30g of an organic compound containing C, H and Oxygen on combustion yields 0.44g  $CO_2$  and 0.18g  $H_2O$ . If one mol of compound weight 60, then molecular formula of the compound is



**Answer: A**



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49. For one of the element various successive ionization enthalpies (in  $\text{kJ mol}^{-1}$ ) are given below

:

IE	1st	2nd	3rd	4th	5th
	577.5	1810	2750	11,580	14,820

The element is

A. *Mg*

B. *Al*

C. *P*

D. *Si*

**Answer: B**





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50. The aqueous solution of following salt will have the lowest pH :



**Answer: A**



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51. One of the following is an essential amino acid.

A. Cysteine

B. Isoleucine

C. Tyrosine

D. Serine

**Answer: B**



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52. The formation of cyanohydrin from a ketone is an example of

- A. Electrophilic Substitution
- B. Electrophilic addition
- C. Nucleophilic addition
- D. Nucleophilic substitution.

**Answer: C**



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53.  $100\text{cm}^3$  of 1 M  $\text{CH}_3\text{COOH}$  was mixed with  $100\text{cm}^3$  of 2 M  $\text{CH}_3\text{OH}$  to form an ester. The change in the initial rate if each solution is diluted with equal volume of water would be

A. 0.25 times

B. 0.5 times

C. 4 times

D. 2 times

**Answer: A**



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**54.** How many coulombs of electricity are required for the oxidation of one mol of water to dioxygen ?

A.  $19.3 \times 10^3 C$

B.  $1.93 \times 10^5 C$

C.  $1.93 \times 10^4 C$

D.  $9.65 \times 10^4 C$

**Answer: B**



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**55.** Cheilosis and digestive disorders are due to the deficiency of

A. Pyridoxine

B. Riboflavin

C. Ascorbic acid

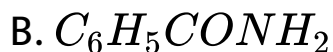
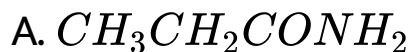
D. Thiamine

**Answer: B**



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**56.** One of the following amide will not undergo Hoffmann bromamide reaction :





D.  $CH_3CONH_2$

**Answer: C**



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**57.** Iodoform can be prepared from all, except

A. acetophenone

B. propan- 1- ol

C. butan -2- one

D. propan -2 -ol

**Answer: B**



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**58.** The arrangement of following compounds :

i. bromomethane ii. bromoform

iii. Chloromethane iv. Dibromomethane

In the increasing order of their boiling point is

A.  $i < ii < iii < iv$

B.  $ii < iii < i < iv$

C.  $iv < iii < i < ii$

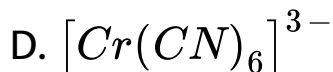
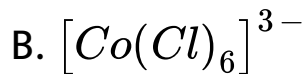
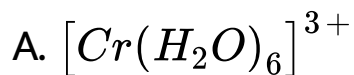
D.  $iii < i < iv < ii$

**Answer: D**



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**59.** The complex ion having minimum magnitude of  $\Delta_o(CFSE)$  is



**Answer: B**



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60. Which of the following colloids cannot be easily coagulated ?

- A. Irreversible colloids
- B. Macromolecular colloids
- C. Multimolecular colloids
- D. Lyophobic colloids.

**Answer: B**



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