



# CHEMISTRY

## BOOKS - MODERN PUBLICATION CHEMISTRY (KANNADA ENGLISH)

### UNIT TEST 6

#### Questions

1. In which of the following compounds manganese has oxidation number equal to

that of iodine in  $KIO_4$ ?

- A. potassium manganate
- B. potassium permanganate
- C. manganous chloride
- D. manganese chloride

**Answer: B**



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2. An element in oxidation state of +3 has the electronic configuration :  $[Ar]3d^3$ . Its atomic number is :

A. 24

B. 26

C. 20

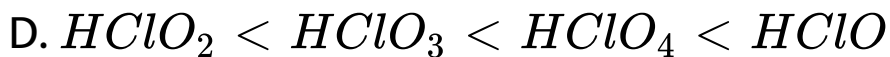
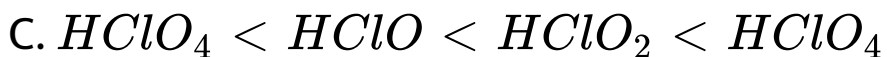
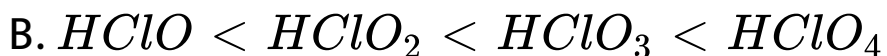
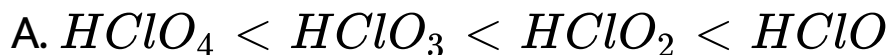
D. 23

**Answer: A**



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3. The correct order of acid strength is

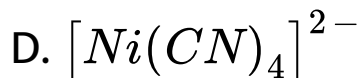


**Answer: B**



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4. Which one of the following has the regular tetrahedral structure ?



**Answer: A**



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5. The oxidation state of nickel in

$K_4[Ni(CN)_4]$  is:

A. +4

B. 0

C. +2

D. -2

**Answer: B**



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6. The number of ions per mole of the complex

$CoCl_3 \cdot 5NH_3$  in aqueous solution will be :

A. 3

B. 7

C. 2

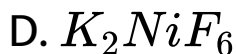
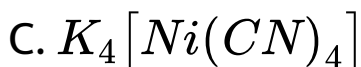
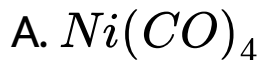
D. 4

**Answer: A**



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7. In which of the following complexes nickel is in the highest oxidation state?



**Answer: D**



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8. The number of  $P - O - P$  bonds in the structure of phosphorus pentoxide and phosphorus trioxide are respectively:

A. 6, 6

B. 5, 5

C. 5, 6

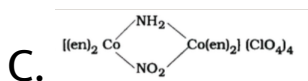
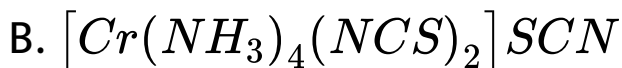
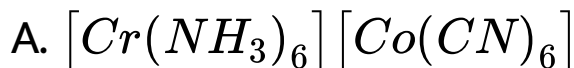
D. 6, 5

**Answer: A**



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9. The coordination isomerism is exhibited by :



**Answer: A**



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10. The number of unpaired electrons in outer orbital  $[Fe(H_2O)_6]^{3+}$  complex is :

A. 1

B. 3

C. 5

D. 2

**Answer: C**



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11. Which of the following is not true? In acidic medium  $K_2Cr_2O_7$  oxidises:

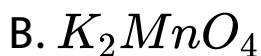
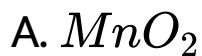
- A. bromides to bromine
- B. hydrogen sulphide to sulphuric acid
- C. ferrous salts to ferric salts
- D. iodides to iodine

**Answer: B**



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12. In alkaline medium,  $KMnO_4$  gets changed into :



**Answer: B**



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13. Which of the following statement is not true?

A. The Ellingham diagram show the plots of

$\Delta G$  vs T.

B. In froth floatation process depressants

are added to enhance the formation of

froth.

C. Extraction of zinc oxide is done by coke.

D. CO is more effective reducing agent

below 983K

**Answer: B**



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14. Which of the following statement is not correct when a mixture of NaCl and  $K_2Cr_2O_7$  is warmed with conc.  $H_2SO_4$  ?



**Answer: C**



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**15.** In the metallurgy of iron , when lime stone is added to the blast furnace , the calcium ion ends up in

- A. gangue
- B. slag
- C. metallic calcium
- D. calcium oxide



**Answer: B**



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**16.** Which of the following ions has magnetic moment of 1.73 B.M. ?



**Answer: C**



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**17.** Extraction of zinc from zinc blende is achieved by :

A. Electrolytic reduction

B. Roasting followed by reduction with carbon

C. Roasting followed by reduction with another metal

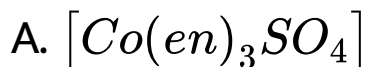
D. Roasting followed by self reduction.

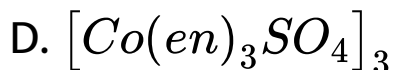
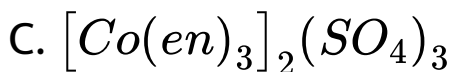
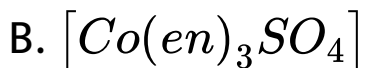
**Answer: B**



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**18.** The formula of the complex, tris (ethylenediamine) cobalt (III) sulphate is :





**Answer: C**



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**19.** which of the following has the smallest ionic radius ?



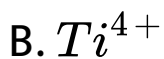


**Answer: C**



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**20. Which ion gives coloured solution ?**



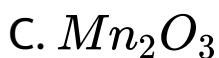
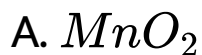


**Answer: D**



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**21. Which of the following is an acidic oxide ?**



D.  $Mn_2O_7$

**Answer: D**



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22. The number of hydrogen atoms attached to phosphorus atom in hypophosphorus acid is :

A. zero

B. two

C. one

D. three

**Answer: C**



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**23.** Among the following molecules :



those having same number of lone pairs of Xe

are:



A. (i) and (ii) only

B. (i) and (iii) only

C. (ii) and (iii) only

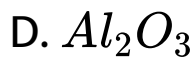
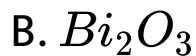
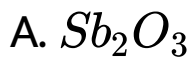
D. (i), (ii) and (iii) only

**Answer: D**



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**24.** Which of the following is the most basic oxide?



**Answer: B**



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**25. Purest form of iron is :**

A. Wrought iron

B. Cast iron

C. Steel

D. Stainless steel

**Answer: A**



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**26.** Which one of the following orders is not in accordance with the property stated against it ?

A.  $HI > HBr > HCl > HF$  : Acidic  
character in water

B.  $F_2 > Cl_2 > Br_2 > I_2$  :  
Electronegativity

C.  $F_2 > Cl_2 > Br_2 > I_2$  : Bond  
dissociation energy

D.  $F_2 > Cl_2 > Br_2 > I_2$  : Oxidising power

**Answer: C**



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27. The compound which gives off oxygen on moderate heating is :

A. HgO

B. CuO

C.  $Al_2O_3$

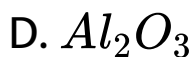
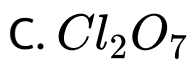
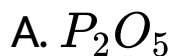
D. ZnO

**Answer: A**



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28. Which of the following oxide is strongly acidic?

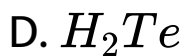
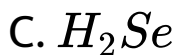
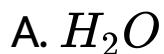


**Answer: C**



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29. Which of the following is least volatile ?



**Answer: A**



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30. In the low spin  $[Fe(H_2O)_6]^{2+}$  complex, the number of unpaired electrons are :

A. 2

B. 3

C. 4

D. 6

**Answer: C**



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31. The equivalent weight of  $KMnO_4$  in alkaline medium (molecular weight =  $M$ ) is equal to :

A.  $M$

B.  $M / 2$

C.  $M / 3$

D.  $M / 5$

**Answer: C**



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**32.** The oxoacid of P having oxidation state +4 is :

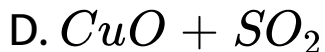
- A. Phosphorous acid
- B. Hypophosphoric acid
- C. Phosphoric acid
- D. Metaphosphoric acid.

**Answer: B**



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33. Copper sulphate pentahydrate on heating to 423 K gives :



**Answer: B**



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34. The roasting of Hg in air produces :

A. HgO

B. Hg

C.  $Hg(NO_3)_2$

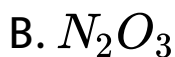
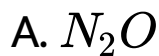
D.  $HgSO_3$

**Answer: B**



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35. The brown gas formed when  $HNO_3$  is reduced by metals is

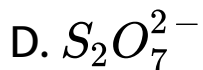
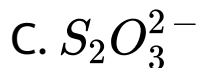
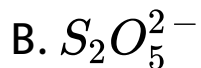
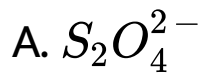


**Answer: C**



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36. There is no  $S - S$  bond in

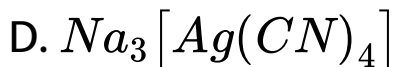
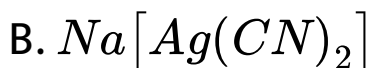
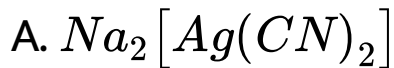


**Answer: D**



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37. Which of the following is formed during the extraction of silver ?



**Answer: B**



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38. Which one of the following is diamagnetic ion?



**Answer: D**



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39. On heating ammonium dichromate, the gas evolved is :

A. Oxygen

B. Ammonia

C. Nitric acid

D. Nitrogen

**Answer: D**



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40. The shape of  $Fe(CO)_5$  complex is :

- A. Octahedral with one lone pair
- B. Square pyramidal
- C. Trigonal bipyramidal
- D. Octahedral with two lone pairs

**Answer: C**



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41. The primary valency of iron in

$K_4[Fe(CN)_6]$  is :

A. 2

B. 3

C. 4

D. 5

**Answer: A**



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42. The number of isomers exhibited by

$[Cr(NH_3)_3Cl_3]$  is :

A. 2

B. 3

C. 4

D. 5

**Answer: A**



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43. The complexes  $[Co(NH_3)_4Cl_2]NO_2$  and :

$[Co(NH_3)_4Cl \cdot NO_2]Cl$  are isomers

A. linkage

B. coordination

C. ionisation

D. geometrical

**Answer: C**



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44. The oxidation number of Pt in Zeise salt is :

A. +1

B. +2

C. +4

D. +6

**Answer: B**



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45. Which of the following is not a  $\pi$ -bonded complex?

A. Ferrocene

B. Zeise salt

C. Dibenzene chromium

D. Tetraethyl lead

**Answer: A**



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**46.** In the first transition series, the divalent compound having maximum magnetic moment is :

A. Mn

B. Fe

C. Cr

D. Cu

**Answer: A**



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47. Which of the following statements, about the advantage of roasting of sulphide ore before reduction is not true ?

A. The  $\Delta_f G^\circ$  of the sulphide is greater than those for  $CS_2$  and  $H_2S$

B. The  $\Delta_f G^\circ$  is negative for roasting of sulphide ore to oxide.

C. Roasting of the sulphide to the oxide is thermodynamically feasible.

D. Carbon and hydrogen are suitable reducing agents for metal sulphides

**Answer: D**



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**48.** The expected spin magnetic moment of

$Fe^{3+}$  is :

A. 2.84 BM

B. 5.46 BM

C. 5.96 BM

D. 6.48 BM

**Answer: C**



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**49.** Which of the following pairs of atoms have the most similar atomic radii ?

A. Cr, Mo

B. Ni, Pd

C. Mo, W

D. Ti, Zr

**Answer: C**



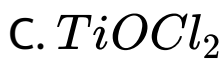
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50. The hydrolysis of  $TiCl_4$  in the presence of

HCl gives :

A.  $TiCl_2$

B.  $TiO_2$

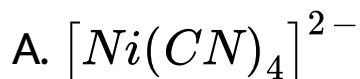


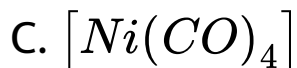
**Answer: C**



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51. Which of the following is diamagnetic and tetrahedral ?





D. both (B) and (C)

**Answer: C**



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52. The number of unpaired electrons in a  $d^7$  tetrahedral configuration is :

A. 3

B. 2

C. 1

D. 7

**Answer: A**

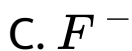


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**53.** Which of the following ligand causes maximum crystals field splitting ?

A.  $NH_3$

B. CO

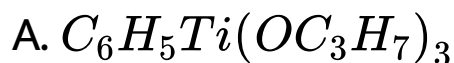


**Answer: B**

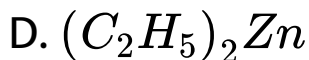
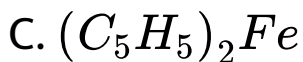


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54. Which of the following is not an organometallic compound?







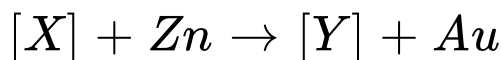
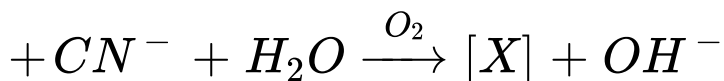
**Answer: B**



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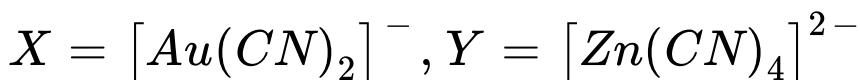
**55.** In the process of extraction of gold,

Roasted gold ore

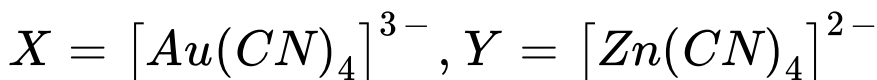


Identify the complexes [X] and [Y]

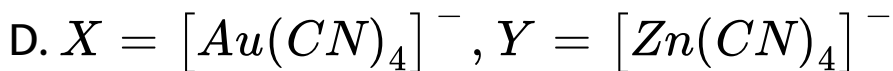
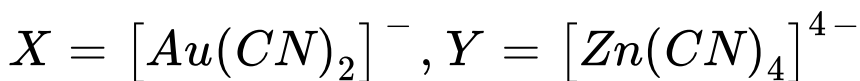
A.



B.



C.



**Answer: A**



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56. The molecular shapes of  $SF_4$ ,  $CF_4$  and  $XeF_4$  are

A. the same with 2, 0 and 1 lone pair of electrons on the central atom respectively

B. the same with 1, 1 and 1 lone pair of electrons on the central atom respectively

C. the same with 0, 1 and lone 2 pair of electrons on the central atom

respectively

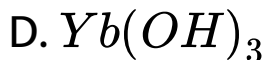
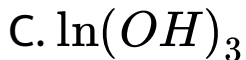
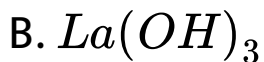
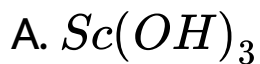
D. the same with 1, 0 and 2 lone pair of electrons on the central atom respectively

**Answer: D**



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**57.** Which of the following is the strongest base ?



**Answer: B**



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**58.** The number of  $\sigma$ -bonds in  $P_4O_{10}$  is:

A. 6

B. 16

C. 20

D. 7

**Answer: B**



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**59.** Which of the following halogens has some metallic character?

A. F

B. Cl

C. Br

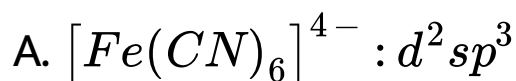
D. I

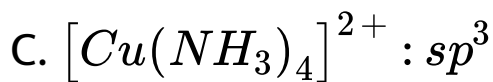
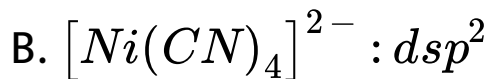
**Answer: D**



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**60.** Which of the following description of hybridisation is not correct?





**Answer: C**



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