

PYQSide

NEET COORDINATION COMPOUNDS — STEREOISOMERISM IN COORDINATION COMPOUNDS — PYQS

Max. Marks: 60

Questions: 15

Section A (MCQ)

- Q.1** Given below are two statements:
(Given: $\text{oxH}_2 = \text{HOOC} - \text{COOH}$)
In light of the above statements, choose the most appropriate answer from the options given below:

Statement-I: $[\text{Fe}(\text{ox})_3]^{3-}$ is chiral.

Statement-II: $\text{trans} - [\text{Cr}(\text{H}_2\text{O})_2(\text{ox})_2]^-$ is chiral.

[RE-NEET (UG) 2026]

- (1) Statement-I is incorrect but Statement-II is correct
(2) Both Statement-I and Statement-II are correct
(3) Both Statement-I and Statement-II are incorrect
(4) Statement-I is correct but Statement-II is incorrect

Scan or tap for the full solution



- Q.2** The complex which has facial and meridional isomers is

(Given : py = pyridine and

en = $\text{H}_2\text{N}-\text{CH}_2-\text{CH}_2-\text{NH}_2$)

[RE-NEET (UG) 2026]

- (1) $[\text{Ni}(\text{en})_2(\text{H}_2\text{O})_2]^{2+}$ (2) $[\text{Cr}(\text{py})_3(\text{Cl})_3]$
(3) $[\text{Cr}(\text{H}_2\text{O})_6]^{3+}$ (4) $[\text{Co}(\text{NH}_3)_4(\text{H}_2\text{O})_2]^{3+}$

Scan or tap for the full solution



- Q.3** The type of isomerism shown by the complex $[\text{CoCl}_2(\text{en})_2]$ is

[NEET 2018]

- (1) geometrical isomerism
(2) coordination isomerism
(3) ionization isomerism
(4) linkage isomerism

Scan or tap for the full solution



- Q.4** The correct increasing order of trans-effect of the following species is

[NEET 2016 (Phase 2)]

- (1) $\text{NH}_3 > \text{CN}^- > \text{Br}^- > \text{C}_6\text{H}_5^-$
(2) $\text{CN}^- > \text{C}_6\text{H}_5^- > \text{Br}^- > \text{NH}_3$
(3) $\text{Br}^- > \text{CN}^- > \text{NH}_3 > \text{C}_6\text{H}_5^-$
(4) $\text{CN}^- > \text{Br}^- > \text{C}_6\text{H}_5^- > \text{NH}_3$

Scan or tap for the full solution



- Q.5** Number of possible isomers for the complex $[\text{Co}(\text{en})_2\text{Cl}_2]\text{Cl}$ will be (en = ethylenediamine)

[AIPMT 2015]

- (1) 1 (2) 3 (3) 4 (4) 2

Scan or tap for the full solution



- Q.6** In a particular isomer of $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]^+$, the $\text{Cl} - \text{Co} - \text{Cl}$ angle is 90° , this isomer is known as

[NEET 2013 (Karnataka)]

- (1) optical isomer (2) cis-isomer
(3) position isomer (4) linkage isomer.

Scan or tap for the full solution



- Q.7** The complex, $[\text{Pt}(\text{Py})(\text{NH}_3)\text{BrCl}]$ will have how many geometrical isomers?

[AIPMT 2011 (Prelims)]

- (1) 3 (2) 4 (3) 0 (4) 2

Scan or tap for the full solution



- Q.8** The existence of two different coloured complexes with the composition of $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]^+$ is due to

[AIPMT 2010 (Prelims)]

- (1) linkage isomerism
(2) geometrical isomerism
(3) coordination isomerism
(4) ionization isomerism.

Scan or tap for the full solution



- Q.9** Which one of the following complexes is not expected to exhibit isomerism?

[AIPMT 2010 (Prelims)]

- (1) $[\text{Ni}(\text{NH}_3)_4(\text{H}_2\text{O})_2]^{2+}$ (2) $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$
(3) $[\text{Ni}(\text{NH}_3)_2\text{Cl}_2]$ (4) $[\text{Ni}(\text{en})_3]^{2+}$

Scan or tap for the full solution



- Q.10** Which of the following does not show optical isomerism?

(en = ethylenediamine)

[AIPMT 2009]

- (1) $[\text{Co}(\text{NH}_3)_3\text{Cl}_3]^0$ (2) $[\text{Co}(\text{en})\text{Cl}_2(\text{NH}_3)_2]^+$
(3) $[\text{Co}(\text{en})_3]^{3+}$ (4) $[\text{Co}(\text{en})_2\text{Cl}_2]^+$

Scan or tap for the full solution



Q.11 Which of the following will give a pair of enantiomorphs?

(en = $\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2$)

[AIPMT 2007]

(1) $[\text{Cr}(\text{NH}_3)_6][\text{Co}(\text{CN})_6]$ (2) $[\text{Co}(\text{en})_2\text{Cl}_2]\text{Cl}$

(3) $[\text{Pt}(\text{NH}_3)_4][\text{PtCl}_6]$ (4) $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]\text{NO}_2$

Scan or tap for the
full solution



Q.12 Which one of the following is expected to exhibit optical isomerism? (en = ethylenediamine)

[AIPMT 2005]

(1) cis- $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$ (2) trans- $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$

(3) cis- $[\text{Co}(\text{en})_2\text{Cl}_2]^+$ (4) trans- $[\text{Co}(\text{en})_2\text{Cl}_2]^+$

Scan or tap for the
full solution



Q.13 Which of the following coordination compounds would exhibit optical isomerism?

[AIPMT 2004]

(1) Pentaamminenitrocobalt (III) iodide

(2) Diamminedichloroplatinum (II)

(3) trans-Dicyanobis (ethylenediamine) chromium (III) chloride

(4) tris-(Ethylenediamine) cobalt (III) bromide.

Scan or tap for the
full solution



Q.14 Which of the following will give maximum number of isomers?

[AIPMT 2001]

(1) $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]$ (2) $[\text{Ni}(\text{en})(\text{NH}_3)_4]^{2+}$

(3) $[\text{Ni}(\text{C}_2\text{O}_4)(\text{en})_2]$ (4) $[\text{Cr}(\text{SCN})_2(\text{NH}_3)_4]^+$

Scan or tap for the
full solution



Q.15 Which complex compound will give four isomers?

[AIPMT 2000]

(1) $[\text{Fe}(\text{en})_3]\text{Cl}_3$

(2) $[\text{Co}(\text{en})(\text{NH}_3)_2\text{Cl}_2]\text{Cl}$

(3) $[\text{Fe}(\text{PPh}_3)_3\text{NH}_3\text{ClBr}]\text{Cl}$

(4) $[\text{Co}(\text{PPh}_3)_3\text{Cl}]\text{Cl}_3$

Scan or tap for the
full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	4	2	1	2	2	2	1	2	3	1	2
Ques.	12	13	14	15							
Ans.	3	4	4	2							