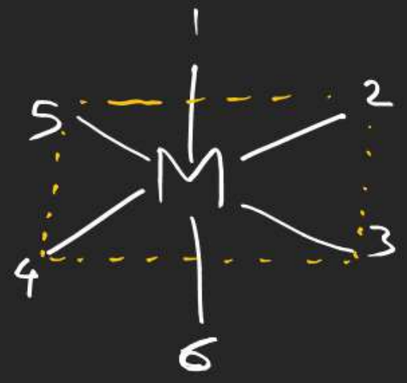
Nishant Jindal

COORDINATION CHEMISTRY



Cisposition [Adj.]

1,2 1,3 1,4 1,5

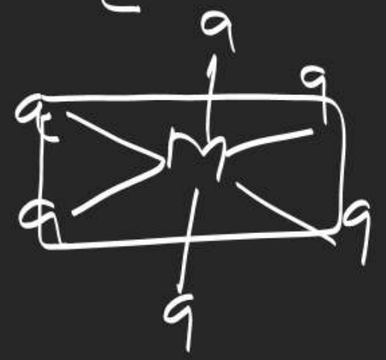
2,3 3,4 4,5 5,2

6,3 6,2 6,5 6,4

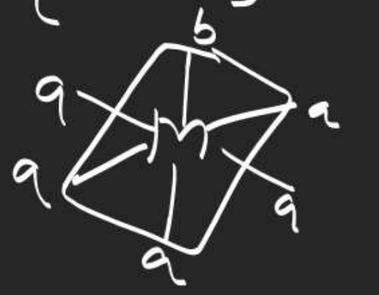
Transposition [Anti]

1,6 2,4 3,5

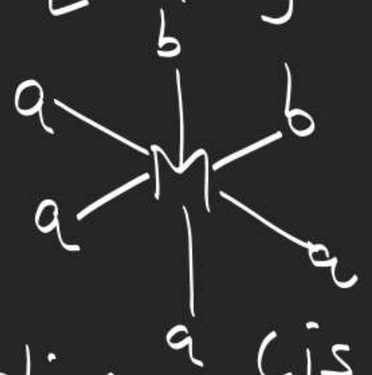
$[Ma_6]$ ×



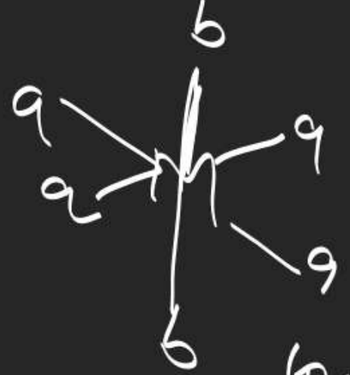
$[Ma_5b]$ ×



$[Ma_4b_2]$



Optical inactive Cis



Trans (O.I)

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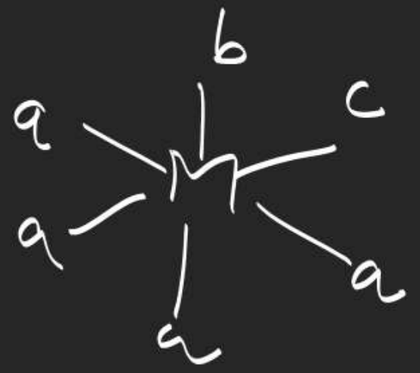
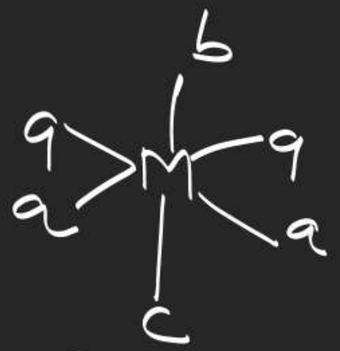
$[Ma_4bc]$



cis

no optical



Trans

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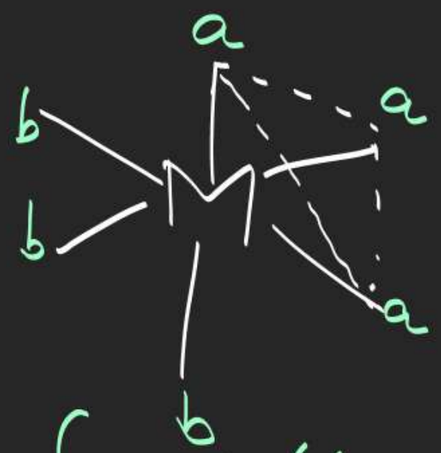
$[Ma_3b_3]$



facial (fac)

Meridional (mer)

Optical Inactive

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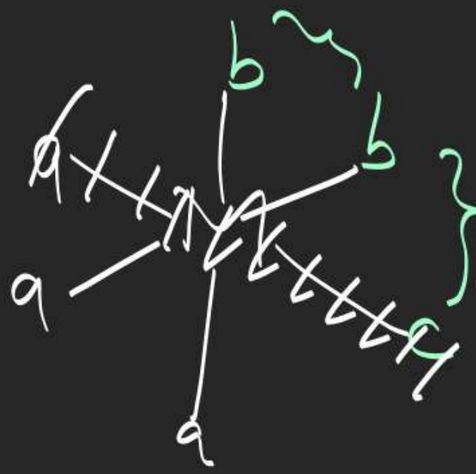
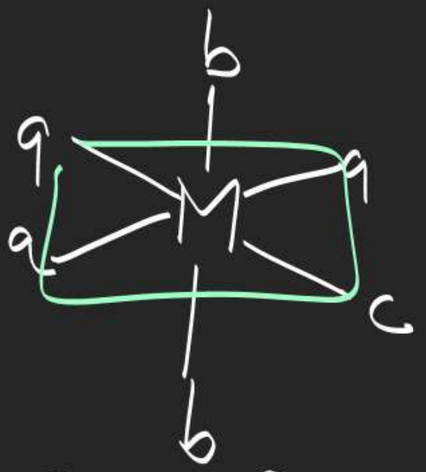
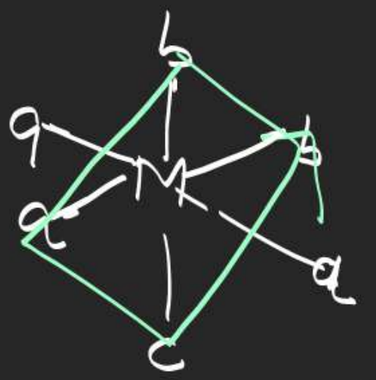
$[Mq_3b_2c]$



cis





2 Trans

w.r.t (bb)

w.r.t (bc)

G.I = $3n - \sum_{2\,\text{Trans}} 1_{cis}$

no optical

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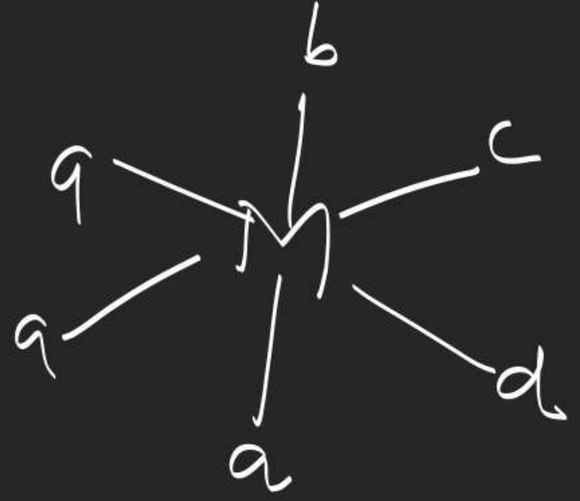
(Mq_3bcd)

G.I = 4 − [1 c.i's / 3 Trans

optical = 5 − [2 O.A / 3 O.I

Stereo = 5



'c' is optical active

G.I.t (bc) — 3 Trans — G.I.t (bd) — G.I.t (cd)

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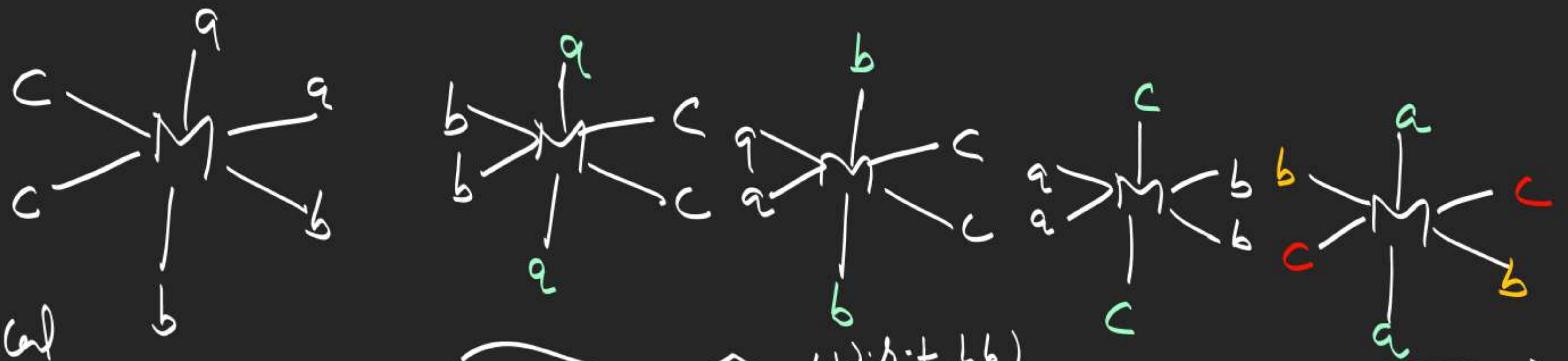
$Ma_2b_2c_2$



optical active — cis

w.r.t (aa), (w.r.t bb), w.r.t (cc), (w.r.t all)

4 Trans

G.I — 1 cis, 4 Trans

optical → 6 — 2 O.A, 4 O.I

Stereo = 6

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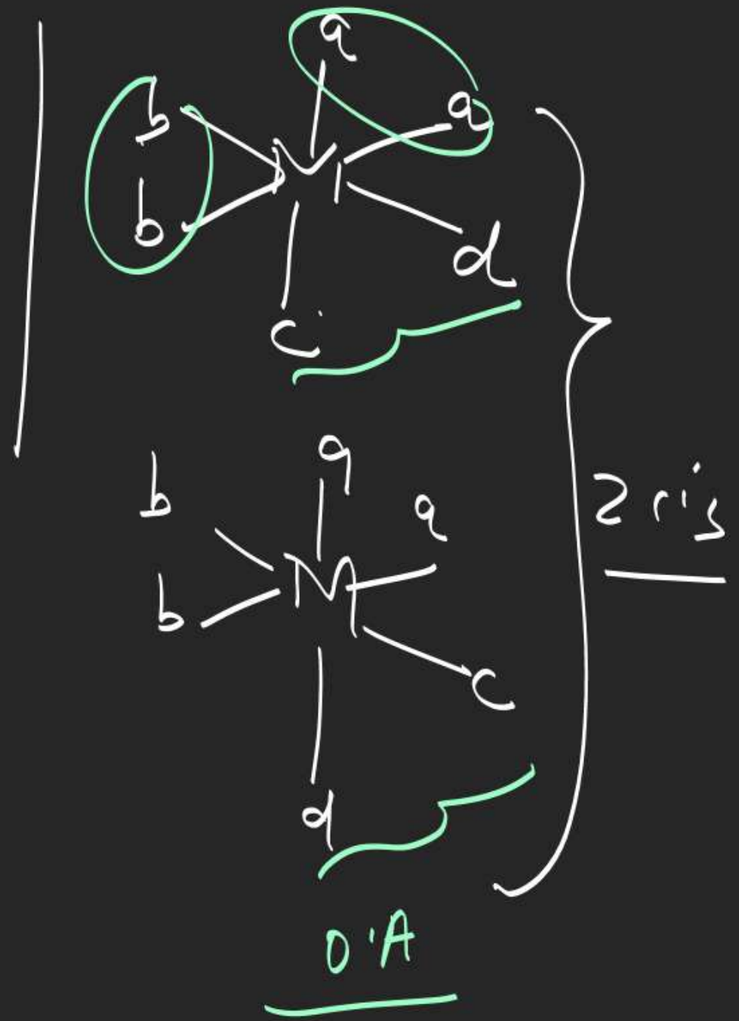
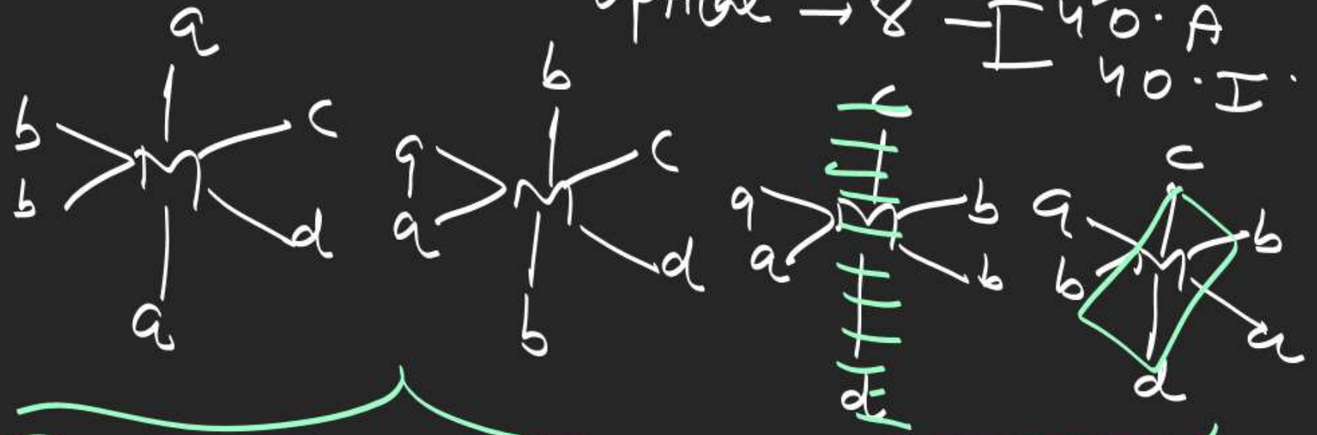
$[Ma_2b_2cd]$

Stereo = 8

G.I ⇒ 6 − [2 cis, 4 Trans

Optical → 8 − [4 O.A, 4 O.I





Trans w.r.t (aa)

Trans w.r.t (bb)

Trans w.r.t cd

Trans w.r.t cee

Trans O.I

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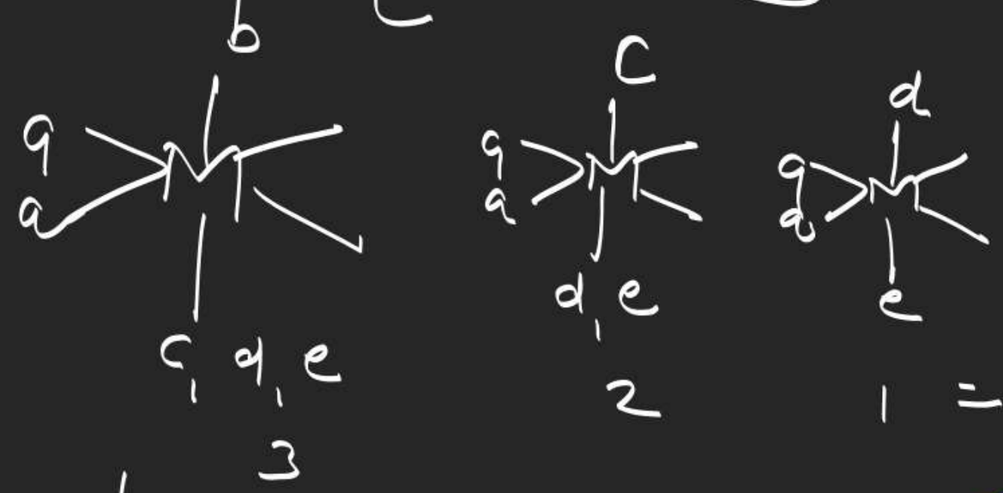
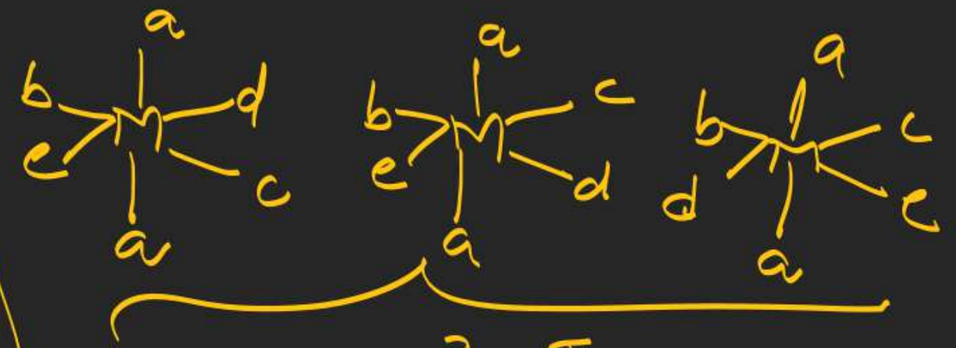
$[Ma_2bcde]$





3 Trans

G.I = 9 − [6 cis, 3 Trans]

Optical = 15 − [12 O.A, 3 O.I]

Stereo = 15

cis 6 isomer

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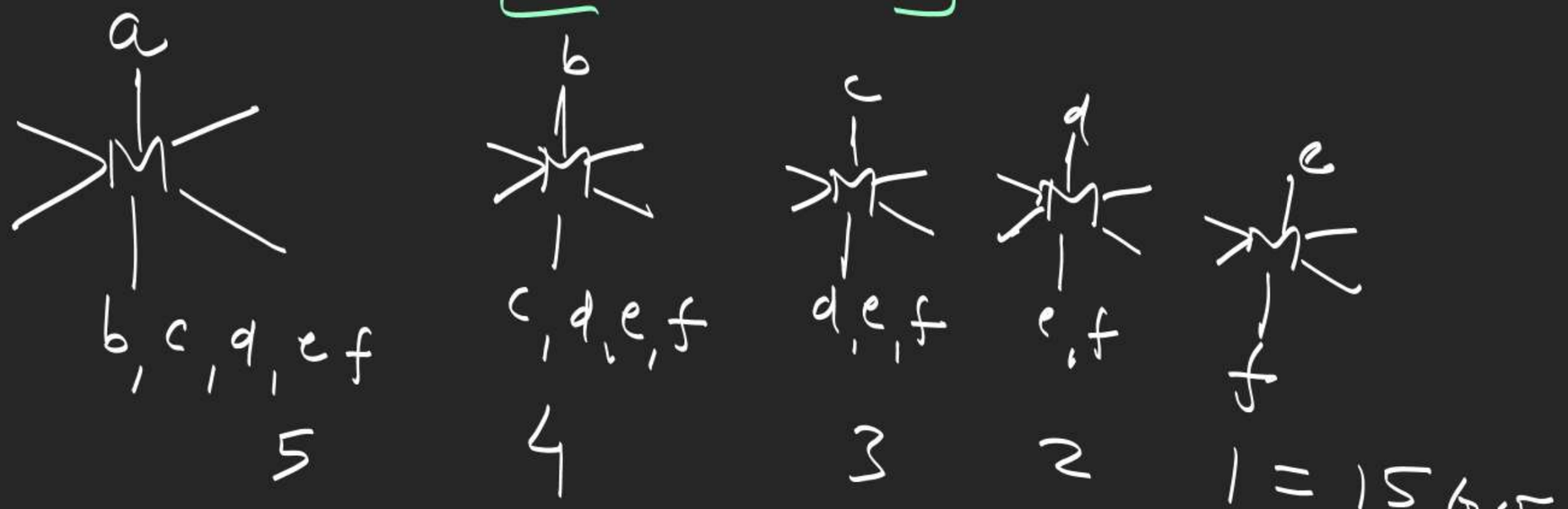
M a b c d e f



15 G.I

Optical = 300 A

Q toroo = 30

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$[M a_3 b c d]$