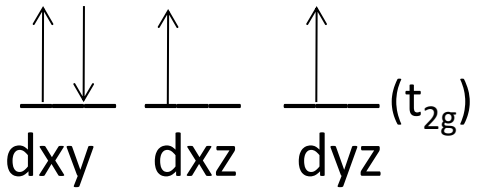
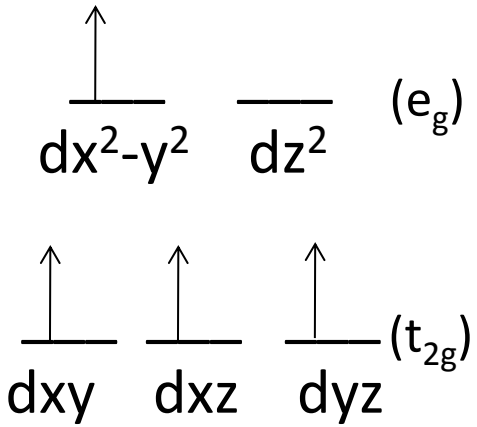
Select the correct HIGH SPIN octahedral crystal field splitting diagram for a d^4 system

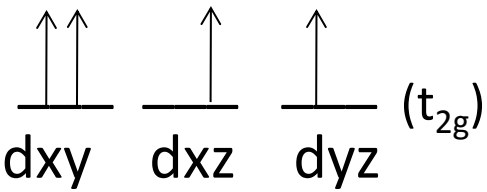
Option A



Option B



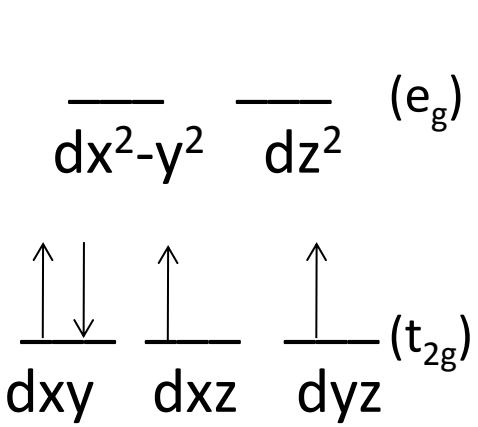
Option C



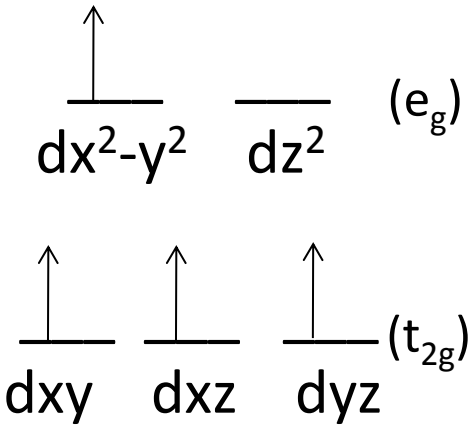
1. Option A
2. Option B
3. Option C

Select the correct HIGH SPIN octahedral crystal field splitting diagram for a d^4 system

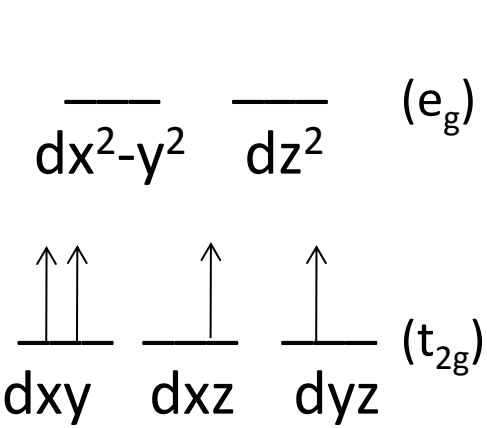
Option A



Option B



Option C



13% 1. Option A

85% ✓ 2. Option B

2% 3. Option C

Which of the following will have filled d-orbitals?

1. Ni^{2+}
2. Pd^{2+}
3. Cu^{2+}
4. Au^{2+}
5. Zn^{2+}
6. Cd^{+2}
7. 1 and 2
8. 3 and 4
9. 5 and 6

Which of the following will have filled d-orbitals?

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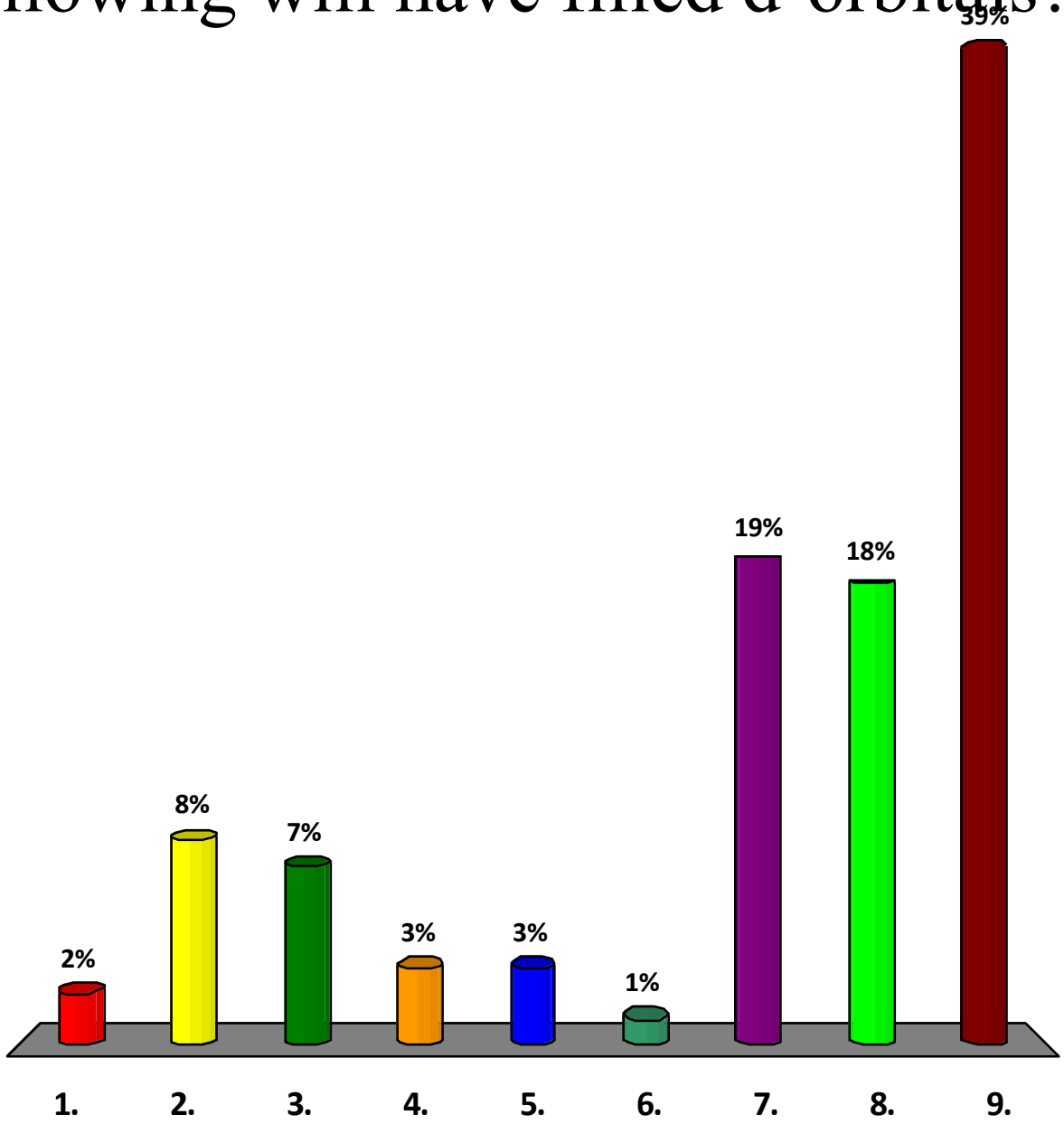
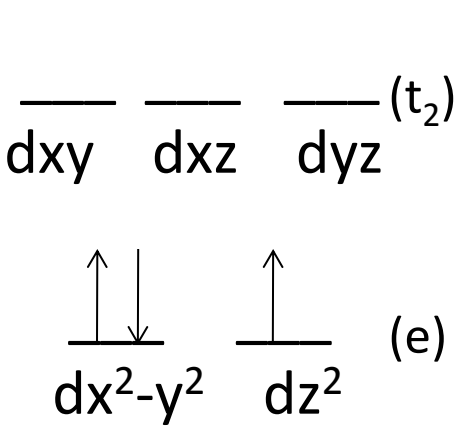
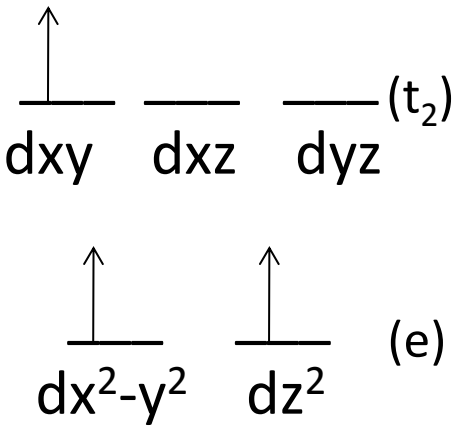


Select the correct tetrahedral crystal field splitting diagram for Cr^{3+}, including correct orbital labels.

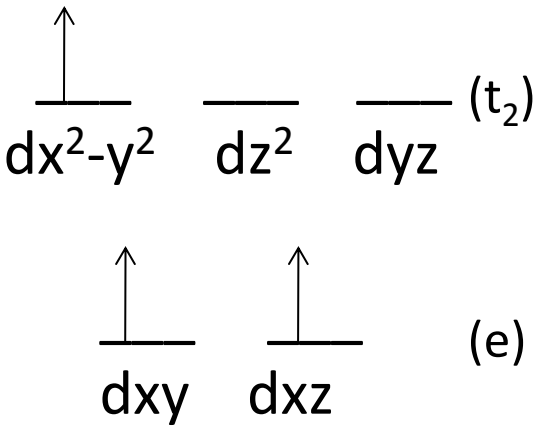
Option A



Option B



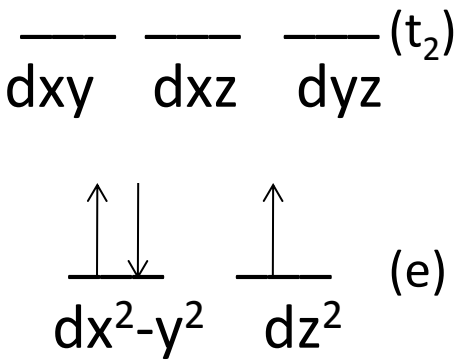
Option C



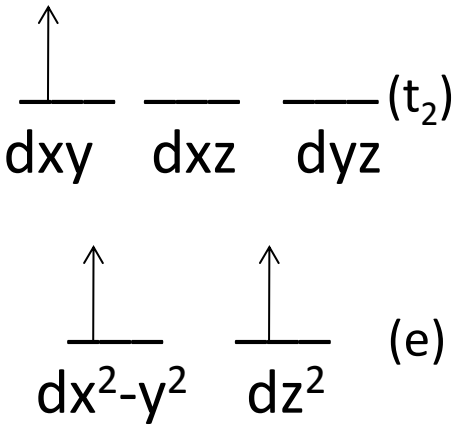
1. Option A
2. Option B
3. Option C

Select the correct tetrahedral crystal field splitting diagram for Cr^{3+}, including correct orbital labels.

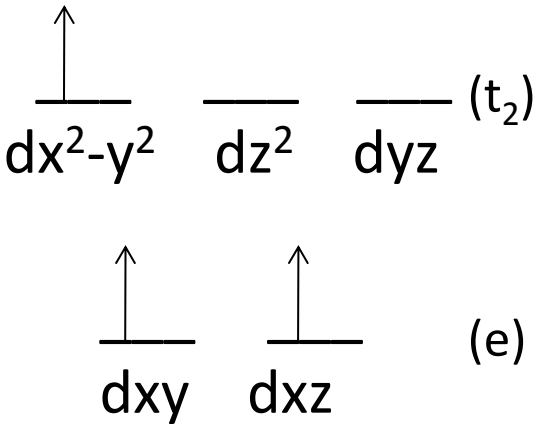
Option A



Option B



Option C



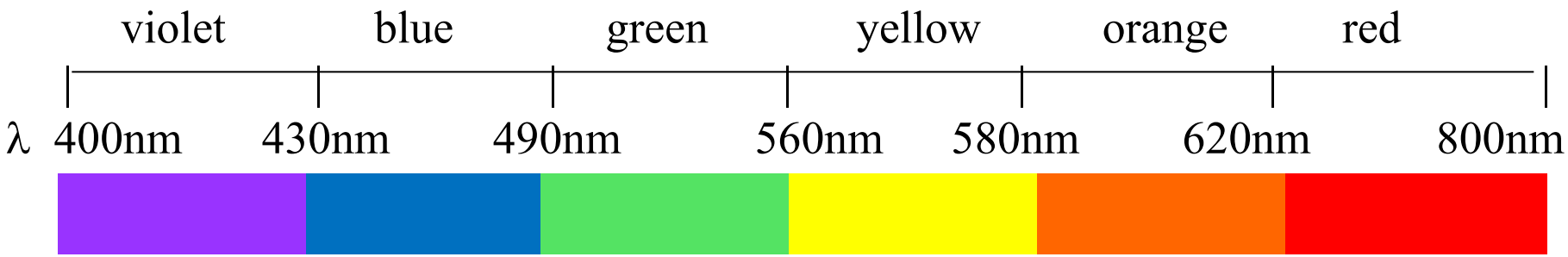
8% 1. Option A

85% 2. Option B

6% 3. Option C

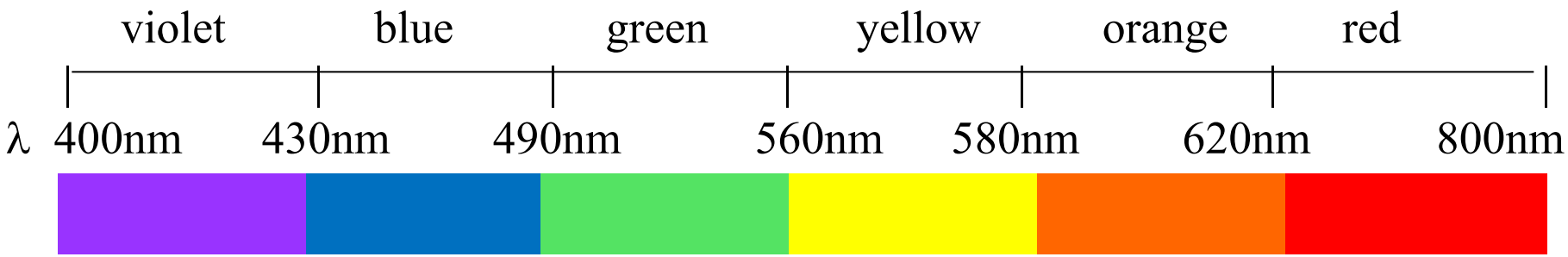
For $[CrCl_6]^{3-}$ the wavelength of most intensely absorbed light is 740 nm, predicted the color of complex?

1. Red
2. Green
3. Blue
4. Yellow
5. Orange
6. Violet



For $[CrCl_6]^{3-}$ the wavelength of most intensely absorbed light is 740 nm, predicted the color of complex?

9%	1. Red
73%	2. Green
7%	3. Blue
0%	4. Yellow
2%	5. Orange
9%	6. Violet



Which of the following would you expect to be **true** for the comparison of d orbital energy between the square planar system and the square pyramidal system?

1. d_{z^2} is destabilized for the square pyramidal case compared to square planar.
2. d_{xz} and d_{yz} are destablilized for the square pyramidal case compared to square planar.
3. $d_{x^2-y^2}$ and d_{xz} are degenerate for square pyramidal.
4. a and b are true.
5. All of the above are true.

Which of the following would you expect to be **true** for the comparison of d orbital energy between the square planar system and the square pyramidal system?

16%

1. d_{z^2} is destabilized for the square pyramidal case compared to square planar.

11%

2. d_{xz} and d_{yz} are destablilized for the square pyramidal case compared to square planar.

4%

3. $d_{x^2-y^2}$ and d_{xz} are degenerate for square pyramidal.

56%

4. a and b are true.

13%

5. All of the above are true.

5.111 Principles of Chemical Science
Fall 2014