

Preview Sheet for Test 4
Hybridization, Coordination Compounds, and Chemical Equilibrium

- Lectures from 11/7 to 11/28
 - Nothing on the MO theory of heteronuclear diatomic molecules!
 - Hybridization: ~25 points
 - Coordination Compounds: ~30 points
 - Chemical Equilibrium: ~45 points
(as always, test coverage is proportional to the time spent on the topic in class)
- Problem Sets 8 and 9
- Reading
 - Chapter 11: pp. 399-409
 - Chapter 23: pp. 1017-1019; 1022-1023; 1028-1032
 - Chapter 17: pp. 723-727; 734-750 (but nothing on K_p)

Studying strategies:

- Focus on your lecture notes and homework. Use your textbook only as a reference.
- This test will consist almost entirely of short answer, essay, and mathematical questions. (I usually like including more multiple-choice and true-false questions, but they would make this test too long.) The implication of this test format is that you should focus on the “big ideas” and concepts from lecture, not the details.
- Do extra problems at the ends of the chapters. In particular, work the blue-numbered problems paired with the black-numbered problems you were assigned for homework; the answers to the blue problems are in Appendix E of your textbook. If you are stuck on a problem, please come talk with me or one of the student tutors:

Student Tutoring Schedule
(in Olin-Rice 341)
Sunday: noon – 9:00 p.m.
Monday – Thursday: 7:00 – 10:00 p.m.

Extra Office Hours
This Tuesday, 6:30 – 8:30 p.m.

- It is also important to understand concepts from lecture not covered explicitly in the homework problems. These may be covered by short-answer or essay questions.
- If a topic was not covered in homework or in lecture, you are not responsible for it! Please ask me if you cannot figure out if a particular topic is “fair game” for the test.

[From the test booklet:]

Instructions before starting the test:

1. Your exam booklet should have **six** pages total, with questions on pages 2-5, and a periodic table and other reference data on p. 6. Check to see you have six pages now. If you do not, ask for another copy of the exam.
2. You may remove the last page.
3. Write your name in the space above and on the backs of pages 2-5.
4. This exam is closed-everything.
5. You may use programmable calculators, but chemical data should not be stored in them.
6. **You must justify on paper your solution of any algebraic equation.**
7. You have **65 minutes** to work on this exam.

What not to memorize (they will be provided):

- (1) A periodic table
- (2) The spectrochemical series (with ligands categorized by weak field vs. strong field), the color wheel, and the visible spectrum sorted by wavelength. (Note that giving you the spectrochemical series makes moot my request on Problem Set 8 for you to (re)memorize the formulas of common ligands and ions in Chapters 2 and 23!)
- (3) The information below:

$$c = \lambda\nu \qquad \frac{1}{\lambda} \equiv \tilde{\nu} \qquad E = h\nu$$
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Test-Taking Tips

- Pace yourself. Try to make your effort on a given problem proportional to the number of points that it is worth.
- Read the problems carefully.
- If you can't figure out how to begin a problem after thinking about it for a couple of minutes, go on to the next problem.
- Please ask me if a question doesn't make sense.