

INFORMATION, SCRAP, AND COVER PAGE

*** KEEP YOUR WORK AND YOUR ANSWERS COVERED ***

This page contains information which may or may not be needed. This page can also be used for scrap paper or for cover paper. THIS PAGE WILL NOT BE COLLECTED. TEAR THIS PAGE OFF THE EXAM.

Avogadro's Number 6.022×10^{23}

Electromagnetic Radiation $c = \lambda\nu = 3.00 \times 10^8 \text{ m/s}$

$$h = 6.626 \times 10^{-34} \text{ J} \cdot \text{s}$$

$$E = h\nu = hc/\lambda$$

Electron Energy $E = -2.18 \times 10^{-18} \text{ J} \left(\frac{Z^2}{n^2} \right)$

Transition Energy $\Delta E = -2.18 \times 10^{-18} \text{ J} \left(\frac{1}{n_{\text{final}}^2} - \frac{1}{n_{\text{initial}}^2} \right)$

PRINT NAME _____

SIGN NAME _____

CIRCLE your recitation section in the list below.

22: W	3:00	HM 106	23: F	10:00	HM 221
24: F	8:00	HM 210	25: M	8:00	HM 210
26: M	9:00	DA 205	27: T	3:00	WS 108
28: W	8:00	HM 210	29: Th	2:00	NS 212C

SCORED GRADE: _____

All answers should be with the correct significant figures.

The Periodic Table and Information Page will not be collected. They may be used as scratch paper or as cover paper. Do not turn them in. If you wish to check your answers against the key, you can copy your answers to those pages.

Be certain your answers are clear. If an answer is not clear, it can be considered wrong.

Problems marked with ** in the margin are from the assigned homework. These total 23 points.

Place your name in the space provided at the top of each question page. This helps to identify the pages if they are accidentally separated during grading and processing.

Work promptly. Use your time effectively.

last name: _____

- ** 6. (4 pts) Circle the energy (in kJ) for one mole of IR photons with a wavelength of 907 nm.

105	108	111	114	117	120.
123	126	129	132	135	138

7. (2 pts) How many elements in Period 5 form a 2+ cation which has a full subshell configuration (of any type)? _____
- (2 pts) How many elements in Period 3 have one (only) unpaired electron (in their neutral atoms)? _____
- (2 pts) Give the formula of one anion with [Ne] configuration. _____

8. (12 pts) Using noble gas abbreviation, give the configuration of each of the following.

Ge²⁺ []

Mo³⁺ []

Cn []

- ** 9. (4 pts) Circle the entry below which has the strongest hold on all of its electrons.

K K⁺ Ca Na⁺ Na Mg