

Grade 9 Science Exam Review

Review Basics

- Redo past tests
- Compare your notebook to a student's with a complete set: make sure nothing is missing! It is YOUR responsibility to make copies to make it complete.
- Bring lists of questions to class during review days
- Pair together with a friend and go over each other's lists of important vocabulary.

What is on the exam?

- Anything we studied!
- Specifically, there are concepts (see Key Concepts at the beginning of the chapters) and vocabulary (Key terms also at the beginning of the chapters). Diagrams, explaining and labeling
- Certain topics were stressed in class: begin with this "essential list"

Chapter	Vocabulary	Concepts
1	cell theory, organelles (eg. ribosomes, mitochondria, vacuoles), mitosis, meiosis, prophase, spindle fibres, centrioles, asexual reproduction (eg. budding, spores, meristem cells), cell wall, chloroplasts, regeneration,	FOR MEIOSIS & MITOSIS: Explain each stage..... Recognize from diagrams Explain why each are necessary. Compare
2	haploid, diploid, homologous pairs, zygote, fertilization, gonads, hermaphrodites, embryo, pistil, stamen, internal vs external fertilization	see ABOVE (meiosis). How does variation in genetic code occur?
3	gestation, hormones (eg. FSH, estrogen, progesterone, testosterone), seminiferous tubules, vas deferens, semen, vagina, cervix, ovary, gonads, menstruation, umbilical cord, labour	Explain how hormones interact in a menstr. cycle Describe sperm, egg production, pathway, fertilization, embryo develop.
4	biotechnology, gene, amino acids, mutations, genetic engineering, proteins, genome, monoculture, clone, nucleotide bases A&T, G&C	Explain models of DNA and how genes form proteins. Discuss history of genetic engineering, uses today, benefits/harm, cloning
5	particle theory of matter, solution, density, phase, pure/mixture, compound, element, alloy, colloid, suspension, Tyndall effect, qualitative, chemical change, precipitate, chemist, electrolysis, law of definite proportions, conservation of mass, Dalton's atomic theory, atom	Be able to deduce if a chemical change has occurred. Solve density problems. Classify substances. Use the test for oxygen, hydrogen, CO ₂

6	molecule, metals, non-metals, metalloids, element symbols, chemical formulas, ore, mineral, smelting, periodic family, group, period	Describe metal extraction, reactivity. Use molecular models to write formulas. Describe patterns in periodic table. Discuss Mendeleev.
7	gas discharge tubes, anode, cathode, electron, proton, neutron, X-ray, radioactivity, alpha, beta and gamma particles, nucleus, electron shells/orbits, Bohr-Rutherford models, atomic number, atomic mass, isotope, ion, atomic mass unit, Thomson, Crookes, Rutherford, Bohr	Give a modern description of the atom. Describe several experiments in discovery of sub-atomic parts. Give examples of inference. Draw Bohr diagrams of elements
8	stable octet, alkaline earth metals, alkali, halogens, noble gases, ionic compound/bond, covalent bonds, molecular compound, crystal lattice, graphite, diamond, valence electrons	Draw diagrams showing ionic bonds and molecular bonds. Describe differences btwn types of bonds. Use position of element in table to find the chemical formula of comp.
9	electric charge, law of electrostatics, neutral, insulator, conductor, static electricity, positive/negative charge, electroscope, spark & lightning, induction, lightning rod, Van de Graff generator, pith ball electroscope, chain of ions	Use the laws to find the charge of a test strip. Explain phenomena (balloons stick to wall, hair stands on end)
10	circuit, switch, circuit diagram and symbols, load, control, load, coulomb, charge, ampere, current, volt, potential difference (voltage), ohm, resistance, water analogy, voltmeter, ammeter (NOTE: we did not cover watt, power), open/closed/short circuits	Draw circuit diagrams. Describe function of various circuit parts and compare to analogy. Solve problems involving V, I and R.
11	parallel and series circuits	Describe differences between types of circuits. Solve for current, potential difference in various circuits.

