**UNIT A Biological Diversity - PAT Qs - Curriculum Outcomes**

(Used 2006, 2008, 2010 & 2012 released exams)

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| --- | --- | --- | --- |
| **General topic of PAT Question** | **Number of times on 4 exams** | **Outcome it matches** **(knowledge outcomes)** | **Priority**  |
| Sexual reproduction (sperm cell, development chart) | 5 | 2.1, 3.3 | 1 |
| Asexual reproduction (binary fission, budding, spore) | 3 | 2.1a, 3.3 | 1 |
| Genetic Technologies (artificial selection, artificial insemination, selective breeding, genetic engineering, seedbank) | 6 | 3.4, 4.3, 4.4,  | 1 |
| Food Chain | 1 | 1.1, 1.3, | 3 |
| Niche (broad vs. narrow, graph) | 6 | 1.2, | 1 |
| Natural Selection  | 1 | 1.4, 3.4, | 2 |
| Heritable and non-heritable characteristics | 4 | 2.4,  | 2 |
| Extirpation/extinction | 2 | 4.2, | 2 |
| Species Distribution \*\*\*\*Frequent question\*\*\*\* | 1 | 4.1 | 2 |
| Pattern of inheritance (dominant and recessive) | 3 | 2.3, 2.5 | 2 |
| Discrete/Continuous variation | 2 | 2.2 | 3 |
| Mitosis/Meiosis  | 1 | 3.1, 3.2 | 2 |
| Genetic Variation | 2 | 1.1 | 3 |
| Relationships (Symbiosis) \*\*Frequent now\*\* | 2 | 1.3 | 2 |
| Scientific Method (responding variable) | 1 |  |  |

**UNIT B Chemistry- PAT Qs - Curriculum Outcomes**

(Used 2006, 2008, 2010 & 2012 released exams)

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| --- | --- | --- | --- |
| **General topic of PAT Question** | **Number of times on 4 exams** | **Outcome it matches** **(knowledge outcomes)** | **Priority** |
| Word equations (chemical formula) | 2 | 4.1, 4.5 | 2 |
| Compound model | 4 | 4.4 | 2 |
| \*Properties (Chemical and physical changes) | 4 | 1.1, 1.3,  | 2 |
| Naming Compounds | 2 | 4.2,  | 2 |
| Atoms, Elements in a compound | 3 | 4.3 | 2 |
| Protons, electrons, neutrons | 4 | 3.3 | 2 |
| \*Periodic Table basics (period, family, M and Non-M) | 2 | 3.1, 3.3,  | 2 |
| Pattern of Reactivity | 1 | 3.1 | 3 |
| Molecular and ionic properties | 4 | 3.4, 4.4,  | 2 |
| Oxygen Reactions (combustion, corrosion) | 2 | 2.2a,  | 3 |
| Conservation of mass | 2 | 2.4c,  | 3 |
| Endothermic vs. exothermic | 2 | 2.4a,  | 3 |
| Rate of reactions | 4 | 2.4b,  | 2 |
| Scientific Method | 2 |  | 2 |
| \*WHMIS | 1 | Key concepts | 3 |
| \*Properties of Metal and non-mental | 2 | 1.2b | 2 |
| Classifying Materials (solution) | 1 | 1.2,  | 3 |
| Model of an atom | 1 | 3.1,  | 3 |

**UNIT C - Enviro Chem - PAT Qs - Curriculum Outcomes**

(Used 2006, 2008, 2010 & 2012 released exams)

|  |  |  |  |
| --- | --- | --- | --- |
| **General topic of PAT Question** | **Number of times on 4 exams** | **Outcome it matches** **(knowledge outcomes)** | **Priority**  |
| Biomagnification/bioaccumulation | 4 | 1.3, 1.4, 3.6 | 2 |
| pH, acid base and neutralization | 8 | 2.5, 2.6, 2.7 | 1 |
| Biodegradation | 2 | 3.2 | 3 |
| ppm/ppb/ppt | 4 | 2.4 | 3 |
| Water quality (including oxygen concentration, phosphates, nitrates, and biological indicators) | 8 | 2.2, 2.3 | 1 |
| Organic & Inorganic | 4 | 1.1, 1.2 | 2 |
| LD 50 (graph) | 2 | 3.3 | 3 |
| Fertilizers | 2 | 1.1, 1.3, 1.5 | 2 |
| Pesticides and resistance | 2 | 1.4 | 3 |
| Landfill, soil leaching | 2 | 3.1, 3.3 | 3 |
| Dilution and dispersion | 3 | 1.3 | 2 |
| Plants (what they take in, what they produce - glucose) | 1 | 1.2 | 3 |
| Substrates | 1 | 2.1 | 3 |
| GRAPHS | 14 | skills | 1 |
| SCIENTIFIC METHOD (variable identification, conclusion, inference) | 6 | skills | 1 |

**UNIT D Electricity - PAT Qs - Curriculum Outcomes**

(Used 2006, 2008, 2010 & 2012 released exams)

|  |  |  |  |
| --- | --- | --- | --- |
| **General topic of PAT Question** | **Number of times on 4 exams** | **Outcome it matches** **(knowledge outcomes)** | **Priority** |
| Current, Voltage, Resistance analogy (water or traffic) | 4 | 2.1, 2.5, 2.6,  | 2 |
| Circuit diagram (circuit breaker, parallel, switches, series, variable resistor) | 5 | 2.4, 2.7, 2.8,  | 1 |
| Wet Cell (zinc & copper electrode and acidic electrolytes) | 4 | 1.3,  | 2 |
| Static Electricity | 3 | 2.2 | 3 |
| Efficiency calculations (often NR, energy lost due to heat/friction) | 3 | 3.3, 3.4 | 1  |
| Fossil fuels/renewable (biomass, hydroelectric, natural gas, coal, oil) | 3 | 4.1, 4.2, 4.3, 4.4 | 2 |
| Electromagnet | 3 | 1.5, | 3 |
| Resistance, Energy and Power formulas | 4 | 3.2 a & b, 2.6 | 2 |
| Resistance (length and width of wire, in series circuit, brightness of bulbs in series vs parallel, tungsten filament, variable resistor) | 7 | 2.3, 2.4 | 1 |
| Thermocouple | 2 | 1.2 | 3 |
| Energy transformations (gravitational, mechanical, electrical, thermal [common energy loss]) | 2 | 3.1, 1.1,1.2,1.4 | 2 |
| AC/DC | 1 | 2.2 | 3 |
| Microcircuits | 1 | 2.9, | 3 |

**UNIT E Space - PAT Qs - Curriculum Outcomes**

(Used 2006, 2008, 2010 & 2012 released exams)

|  |  |  |  |
| --- | --- | --- | --- |
| **General topic of PAT Question** | **Number of times on 4 exams** | **Outcome it matches** **(knowledge outcomes)** | **Priority** |
| Space junk | 2 | 4.1 | 3 |
| Basic orbital paths | 2 | 1.5 | 3 |
| Rocket propulsion (chemical, ion, solar) | 1 | 2.3 | 3 |
| Political, Environ, ethical (space junk, animals, government) | 2 | 4.1, 4.2, 4.3 | 3 |
| Triangulation and parallax (determining distance) | 4 | 3.3 | 3 |
| Inner vs. Outer planet characteristics | 4 | 1.4, 1.5,  | 1 |
| Azimuth, altitude | 4 | 1.5c | 2 |
| Geocentric vs. Heliocentric (circular/elliptical) | 4 | 1.1 | 2 |
| Spectroscope | 2 | 1.4 | 3 |
| Optical vs. radio telescopes (advantages, interferometry, reflecting/refracting, Hubble telescope benefits) | 5 | 1.2, 3.1, 3.2 | 1 |
| Vocab (galaxy, constellation, nebula, GPS, shuttle, probe, eclipse of sun, )  | 4 | 1.3, 1.5, 2.5, 2.3  | 2 |
| Life cycle of a star | 1 | 1.3,1.4 | 3 |
| Space Station (water recycling) | 1 | 2.2, 2.3 | 3 |
| Size of objects in space (universe, galaxy, solar system, planet, moon) | 3 | 1.3, 1.4 | 3 |
| Doppler (blue/red shift) | 1 | 1.5,1.6 | 3 |
| Satellites/GPS (orbits, geosynchronous) | 2 | 2.5,3.3 | 3 |
| Scientific Method (manipulated, graph analysis) | 3 |  | 1 |

**Legend of Priority**

1= Essential

2= Important to know and do

3=important to review