



Student's Name: _____

Grade 11th

19th October, 2025

Q1) Define the following:

Stress: _____

Crystalline Solid: _____

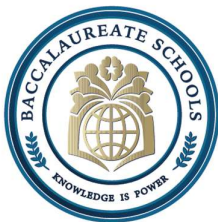
Electrical Conductivity: _____

Elastic Deformation: _____

Q2) A wire with a length of 3-m and a cross-sectional area of 0.002-m² is stretched 0.1-cm by a 98-kg hanging weight. Determine Young's Modulus for the wire.

Q3)

The bulk modulus of steel is 1.60×10^{11} Pa. Determine the change in volume experienced by a steel beam that is taken from an environment of 24,500 Pa pressure to an environment at 15,800 Pa. The original volume of the steel is 3.70 m³.



Q4)

Nichrome is an alloy of nickel and chromium that is used in the heating elements of stoves and toaster ovens. If a certain alloy consists of 80% nickel and 20% chromium, and the density of nichrome is 8.47 g/cm^3 , what is the density of chromium? Use 8.91 g/cm^3 as the density of nickel.

Q5) Determine if the statement is true or false, and if false correct the statement:

Metallic Bonds are a form of ionic bonds. (_____)

Dalton's theory resulted in the discovery of electrons. (_____)

Rutherford's atomic model showed that atoms have a positive nucleus. (_____)

Atomic radius increases as we move from left to right in the periodic table (_____)

Q6)

The atomic number of lithium is 3, and the atomic number of tin is 50. Their atomic weights are about 7 atomic mass units (amu) and 119 amu, respectively. However, despite the large difference in atomic number and weight, lithium and tin atoms are not too different, 145 pm in radius. Explain why this is the case.