TRUE The three basic rules of hierarchical structures are Scale, Interaction, and Architecture.

TRUE Unmodified or "neat" polystyrene is a very "brittle" material.

FALSE The glass transition temperature (Tg) of an amorphous polymer is independent of the molecular weight of the polymer.

TRUE Polystyrene foam products can be produced by two methods, extruded and expanded.

TRUE A free radical initiator for polymerization requires an unpaired electron in an atomic orbital.

FALSE The ratio of the secant modulus to the tangent modulus (i.e., secant modulus/tangent modulus) is always greater than one (>1.00).

TRUE The product of the "Reactivity Ratios" between two monomers in a free radical polymerization determines the monomer sequence in the resulting polymer chain.

TRUE A craze in an amorphous polymer is associated with thin fibrils bridging the two separate polymer surfaces.

FALSE The Izod and Charpy impact strength of a polymeric material is independent of the notch tip radius and the impact specimen thickness.

TRUE **"**Mass" polymerized ABS (mABS) usually has a larger rubber particle domain size than "emulsion" polymerized ABS (eABS).

TRUE The density of the crystalline region of polyethylene is about 1.00 g/cm^3, and the density of the amorphous region of polyethylene is about 0.850 g/cm^3 to 0.855 g/cm^3.

FALSE The melt transition temperature (™) of polyethylene is independent of the density of polyethylene.

TRUE A plastomer is a polymer material which combines qualities of elastomers and plastics, such as rubber-like properties with the processing ability of plastic.

FALSE The viscosity average molecular weight (Mv) of a polymer molecular weight distribution is always lower than both the number average molecular weight (Mn) and the weight average molecular weight (Mw).

FALSE The propagation rate of a crack through polyethylene material as measured by the PENT test is independent of the molecular weight distribution of the polyethylene material.