ABSTRACT
The compressive strengths of normal concrete mixes of nominal mix ratios 1:2:4, 1:2.5:5 and 1:3:6 were assessed using periwinkle shells as lightweight aggregate. For each of the concrete mix ratios, crushed rock and periwinkle shells were separately used as coarse aggregate to make the concrete. Workability of each of the concrete mixes was checked. Concrete cubes of 150 mm x 150 mm x 150 mm were cast. At the end of 28 days of casting and curing, the densities and compressive strengths of the concretes were tested. Results show that the workability of concrete with periwinkle shells is higher than that with crushed rock aggregate. Periwinkle shells aggregates reduced the weight of the normal concrete by at least 18%. The leaner the concrete, the lower the compressive strength obtained when periwinkle shells are used as coarse aggregate. The compressive strength of periwinkle shell aggregate concrete is lower than that of crushed rock aggregate concrete by 42.65%, 43.21% and 55.11% for concrete mixes of ratios 1:2:4, 1:2.5:5, and 1:3:6, respectively. Hence the leaner the concrete, the more unsuitable the periwinkle shells are, as coarse aggregate in the concrete. However, the compressive strength of the periwinkle shells aggregate concrete meets the requirements for the compressive strength of lightweight concrete. The periwinkle shells are, therefore, recommended as aggregates for lightweight concrete.