A nutrition lab wants to study the effect of storage time on the amount of Vitamin C that is present in freeze dried fruit. They conduct an experiment in which 12 packages of freeze dried fruit are randomly divided into groups of 4, and stored for the following periods (in months): 0, 6, 12. At the end of each storage period, the amount of Vitamin C present in the corresponding packages is estimated (in milligrams of Vitamin C per 1000 milligrams of fruit). Identify each of the following as clearly & precisely as possible:

(a) Experimental units.
(b) Factors - how many, name of each, and levels of each.
(c) Treatments - how many, and what they are.
(d) Response.

Solution

(a) Experimental units = The 12 packages of freeze dried fruit.
(b) There is one factor. It is “storage time.” It has 3 levels: 0, 6, and 12 months.
(c) There are 3 treatments. Since there is only one factor, the treatments are the same as the factor levels, i.e., 0, 6, and 12 months.
(d) Response = The amount of Vitamin C present in the fruit package (in mg of Vitamin C per 1000 mg of fruit).

Grading: Total points possible = 10.

1 pt - Any reasonable attempt.
(a) = 2pt.
(b) = 3pt.
(c) = 2pt.
(d) = 2pt.