In this paper, damped spring-mass systems with generalized piecewise constant argument and with functional dependence on generalized piecewise constant argument are considered. These spring-mass systems are examined without reducing them into discrete equations. While doing this examination, we make use of the results which have been obtained for differential equations with functional dependence on generalized piecewise constant argument in [1]. Sufficient conditions for the existence and uniqueness of solutions of the spring-mass system with functional dependence on generalized piecewise constant argument are given. The periodic solution of the spring-mass system which has functional force is created with the help of the Green’s function, and its uniqueness is proved. The obtained theoretical results are illustrated by an example. This illustration shows that the damped spring-mass systems with functional dependence on generalized piecewise constant argument with proper parameters has a unique periodic solution which can be expressed by Green’s function.