SEMIGROUP SEMIRINGS

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The study of semirings has been very recently carried out but several researchers. A semiring is a generalization of a ring and all rings are semirings but a semiring need not in general be a ring. Thus we in this paper define a new concept called semigroup semirings, which are analogous to semigroup rings that are semigroups over rings. We replace the rings by semirings and define semigroup semirings. We take only multiplicative semigroups with identity. First we prove all semigroup semirings are also semirings. The semirings S are taken to be commutative semirings with 1. One of the marked differences, which we have observed in course of our study, is that in case of semigroup semirings we can write the elements from the semigroup only in terms of elements from semigroup semirings. We discuss two types of semigroup semirings

1. When the semirings are of infinite order and
2. When the semirings under consideration are finite.

Finally concepts like zero divisors, units and idempotents in semigroup semirings are studied. Special case of interest is when the semigroup happens to be ordered semigroup.

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