**Solution:**

Since the bonds pay 12% annually, it means that they pay 6% at a semi-annual rate. Thus, every half year, the bond holder receives per half year.

The bonds will mature in 3 years i.e. after 6 payments. The full lump sum of $10,000 will be paid after this period. Thus, the present value of the bond for a market rate of per payment, is calculated as follows:

1. The payments are like an annuity; thus, their present value becomes:
2. The lumpsum amount paid at the end, which can be written as:

Thus, the present value of the bond will be given by:

1. For a market rate of 12% (6% semi-annually), we get the present bond value as:

* The interest part:
* The principal part:

1. For a market rate of 14% (7% semi-annually), we get the present bond value as:

* The interest part:
* The principal part:

1. For a market rate of 10% (5% semi-annually), we get the present bond value as:

* The interest part:
* The principal part:

As expected, in (2) the bond is sold at a discount of $476.65, while in (3), the bond is sold at a premium of $507.57 respectively.