these are calculated, let us look an example.

Suppose a firm borrows ₹ 1,000,000 at an interest rate of 15 percent and the loan is to be repaid in 5 equal instalments payable at the end of each of the next 5 years. The annual instalment payment A is obtained by solving the following equation.

$$\text{Loan amount} = A \times \text{PVIFA}_{n=5,\, r=15\%}$$

$$1{,}000{,}000 = A \times 3.3522$$

$$\text{Hence } A = 298{,}312$$

The amortisation schedule is shown in Exhibit 6.11. The interest component is the largest for year 1 and progressively declines as the outstanding loan amount decreases.

**Exhibit 6.11** **Loan Amortisation Schedule**

| *Year* | *Beginning Amount (1)* | *Annual Instalment (2)* | *Interest (3)* | *Principal Repayment (2)-(3) = (4)* | *Remaining Balance (1)-(4) = (5)* |
|---|---|---|---|---|---|
| 1 | 1,000,000 | 298,312 | 150,000[a] | 148,312[b] | 851,688 |
| 2 | 851,688 | 298,312 | 127,753 | 170,559 | 681,129 |
| 3 | 681,129 | 298,312 | 102,169 | 196,143 | 484,986 |
| 4 | 484,986 | 298,312 | 72,748 | 225,564 | 259,422 |
| 5 | 259,422 | 298,312 | 38,913 | 259,399 | 23* |

a. Interest is calculated by multiplying the beginning loan balance by the interest rate.
b. Principal repayment is equal to annual instalment minus interest.
* Due to rounding off error a small balance is shown.

The above schedule can be set up using a spreadsheet as below:

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | | Present value | Interest rate | No. of instalments (in years) | Annual instalment amount | |
| 2 | | 1,000,000 | 15% | 5 | 298,316 | |
| 3 | Year | Beginning amount | Annual instalment | Interest | Principal repayment | Remaining balance |
| 4 | 1 | 1,000,000 | 298,316 | 150000 | 148,316 | 851,684 |
| 5 | 2 | 851,684 | 298,316 | 127,753 | 170,563 | 681,121 |
| 6 | 3 | 681,121 | 298,316 | 102,168 | 196,148 | 484,973 |
| 7 | 4 | 484,973 | 298,316 | 72,746 | 225,570 | 259,403 |
| 8 | 5 | 259,403 | 298,316 | 38,910 | 259,406 | –3 |