9.2 COMPONENTS OF PREMIUM OF OPTIONS

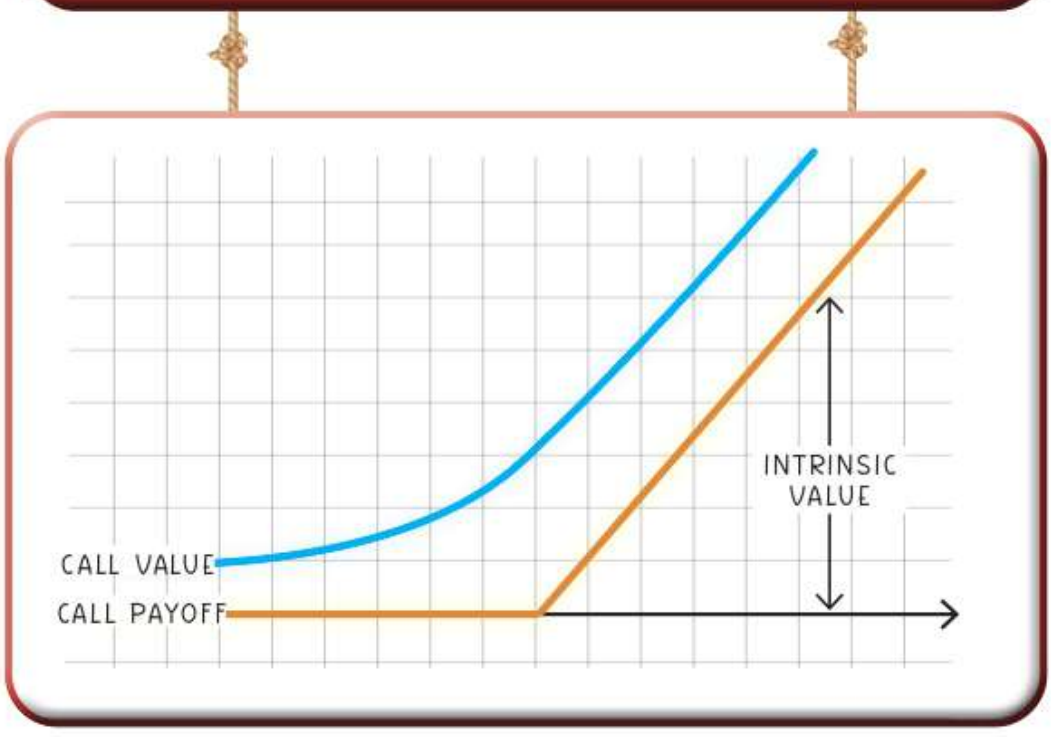
The premium of options basically consists of two components.

INTRINSIC VALUE/ IN-BUILT PROFITS

TIME VALUE

INTRINSIC VALUE/ IN-BUILT PROFITS

"THE INTRINSIC VALUE OF AN OPTION IS ITS IN-BUILT VALUE. IT CAN ALSO BE UNDERSTOOD AS IN-BUILT PROFITS AT THE TIME OF TAKING THE TRADE."



In-built value only exists for In the money Options. The difference between the Strike Price and Market price of the underlying asset gives the In-built profit value. For Out of money and At the Money Options, the In-built profit value is zero.

Note - Intrinsic Value may not be the best term to describe the In-built value but due to lack of better word and how begiiners understand intrinsic value, we use the word - Intrinsic Value here. In finance at large, Intrinsic Value has a different meaning. It means - The True Value of any asset.

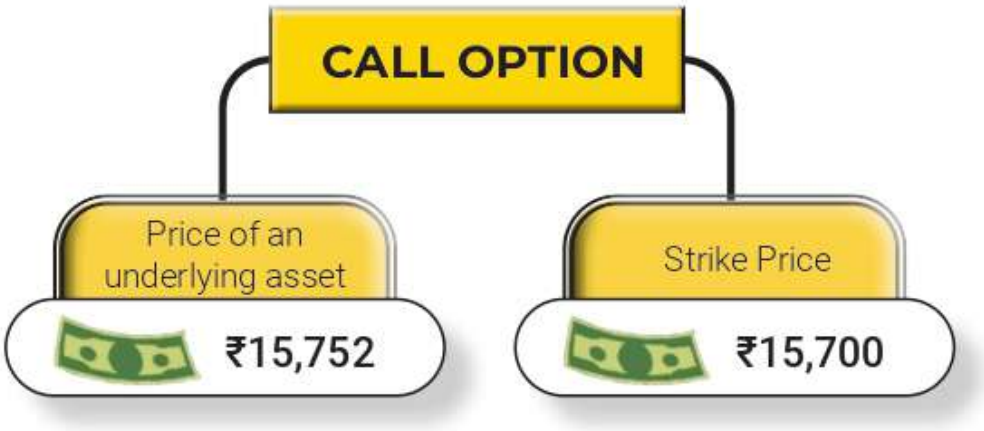
- For Call Option,

IN-BUILT VALUE = PRICE OF UNDERLYING ASSET - STRIKE PRICE

- For put Option,

IN-BUILT VALUE = STRIKE PRICE - PRICE OF UNDERLYING ASSET

For instance, using the option chain for a call option you have,



The In-Built Value then, for the call option, will be,

Price of the Underlying Asset – Strike Price.

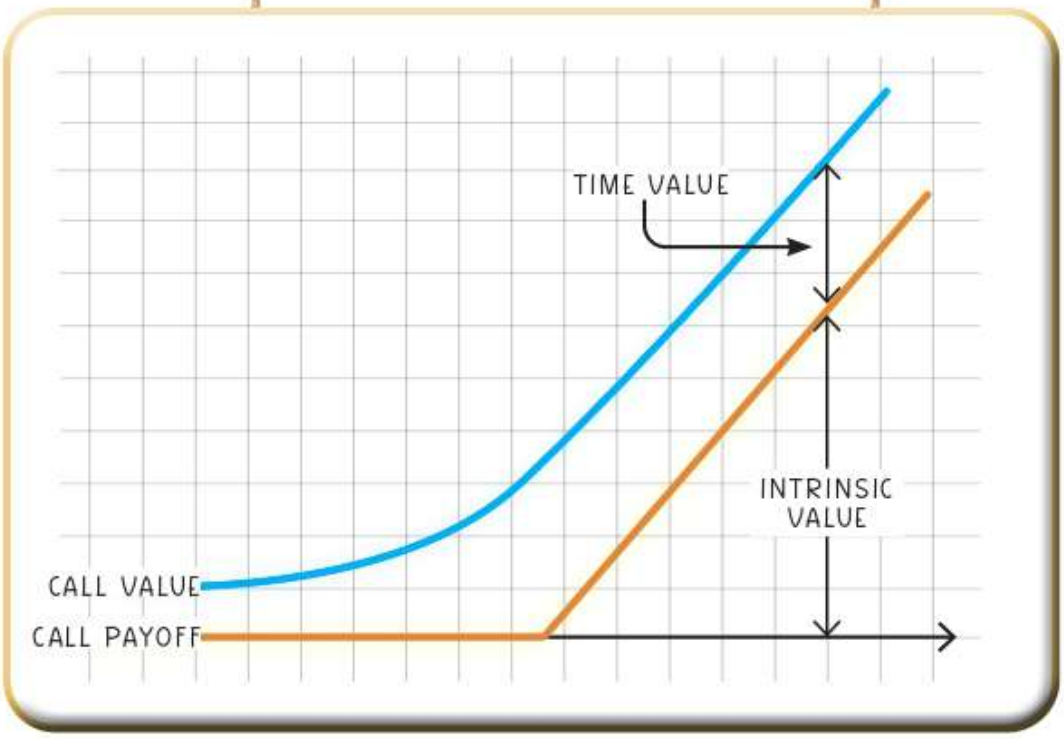
₹15,752 – ₹15,700

₹52

THIS **₹52** IS THE IN-BUILT PROFIT OF THE OPTION EMBEDDED IN THE PREMIUM AMOUNT.

TIME VALUE

> THE TIME VALUE PREMIUM IS THE PREMIUM THAT OPTION BUYER PAYS TO THE OPTION SELLER TO COMPENSATE FOR THE RISK THAT THE SELLER IS TAKING.



The option seller is assuring limited losses and unlimited profit potential to the buyer based on stock price movement in a certain time frame and is being compensated for the same. The buyer pays this to enjoy unlimited profit potential and limited losses.

For instance,
as we use the option chain for values in the above example, we saw that the premium was ₹199 and in-built profits were ₹52.

Now, since the intrinsic value part is ₹52, the surplus must be the time value.

Time Value = Premium amount – Intrinsic value

= ₹199 – ₹52

= ₹147

Time Value in an option depends a lot on the time left till expiry. Option with expiry in one week will have less premium as compared to the option with expiry in one month.

We may frame its equation like this,

OPTIONS PREMIUM = INTRINSIC VALUE /IN-BUILT PROFITS + TIME VALUE

- INTRINSIC VALUE (CALL OPTION) = PRICE OF UNDERLYING ASSET - STRIKE PRICE
- INTRINSIC VALUE (PUT OPTION) = STRIKE PRICE - PRICE OF UNDERLYING ASSET

- ✅ Intrinsic value can be calculated only for In the Money (ITM) options.
- ✅ In At the money (ATM) and Out of the Money (OTM), Intrinsic value will be Zero.

Let us try to solve a hypothetical calculation.
Given: For a stock trading on the exchange,

Find the Intrinsic value and the time value of this ITM call option.

Let's find them together,

Intrinsic value/ In-built profits = Stock price - Strike price

= ₹1000 – ₹900

= ₹100

Now,

Option Premium = Intrinsic value/ In-built profits + Time value

So, **Time value = Option Premium - Intrinsic value/ In-built profits**

= ₹150 – ₹100

= ₹50

There we have the two components of option premium. This is how we can solve for other options too.

The only thing to note here is that for ITM options we have an in-built profit value. But for ATM or OTM options, Option premium = Time value of option. This is because, for ATM and OTM the in-built profit value is zero, i.e., they do not have any in-built profits in them.

Try to practice some more practical option pricing questions through the option chain on NSE. Find the in-built profit and time value in the premium amount. Get the hang of it.