

NUMBER SYSTEM - DISCOUNTS

Advertisements

Suppose a man has to pay Rs. 156 after 4 years and the rate of interest is 14% per annum. Clearly, Rs. 100 at 14% will amount to Rs. 156 in 4 years. So, the payment of Rs. now will clear off the debt of Rs. 156 due 4 years hence. We say that:

Sum due = Rs. 156 due 4 years hence;

Present Worth (P.W.) = Rs. 100;

True Discount (T.D.) = Rs. (156 - 100) = Rs. 56 = (Sum due) - (P.W.)

We define: T.D. = Interest on Present Worth; **Amount = Present Worth + True Discount**

Interest is reckoned on P.W. and true discount is reckoned on the amount.

Important Formulae

Let rate = R% per annum and Time = T years. Then,

$$\begin{aligned} P.W. &= (100 \times \text{Amount}) / (100 + (R \times T)) \\ &= (100 \times T.D.) / (R \times T) \end{aligned}$$

$$\begin{aligned} T.D. &= (P.W. \times R \times T) / 100 \\ &= (\text{Amount} \times R \times T) / (100 + (R \times T)) \end{aligned}$$

$$\text{Sum} = (S.I. \times T.D.) / (S.I. - T.D.)$$

$$S.I. - T.D. = S.I. \text{ on } T.D.$$

When the sum is put at compound interest, then

$$P.W. = \text{Amount} / (1 + R/100)^T$$

Solved Examples

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