

Chapter-4 MATHEMATICS OF FINANCE

1) $S.I = P \cdot r \cdot t$

2) Compound Interest: $A = P \left(1 + \frac{r}{m}\right)^{t \cdot m}$

3) In S.I, Rs. Possible: $r = \frac{1}{t}$, $t = \frac{1}{r}$

4) $C.I - S.I = P \cdot r^2 (Rs. 2 \text{ years})$

5) $C.I - S.I = P \cdot r^2 (Rs. 3 \text{ years})$

6) Effective Rate: Compounding Annually.

7) Nominal Rate: Compounding Quarterly, Monthly etc.

8) Effective rate = $\left(1 + \frac{r}{m}\right)^m - 1$

9) Depreciation = Sale value = $C [1 - d]^t$

10) $P.V = \frac{F.V}{\left[1 + \frac{r}{m}\right]^{t \cdot m}}$

11) Growing Perpetuity: when Regular Payment is received with Growth Rs infinite Period.

ing fund: F.V of Regular Annuity.

13) Regular Annuity: Payment at end of the Period.

$$P.V = R \left[\frac{(1+i)^n - 1}{i} \right]$$

$$P.V = R \left[\frac{1 - (1+i)^{-n}}{i} \right]$$

14) Immediate Annuity: Payment at Beginning of the Period.

$$P.V = R \left[\frac{(1+i)^n - 1}{i} \right] (1+i)$$

$$P.V = R \left[\frac{1 - (1+i)^{-n}}{i} \right] (1+i)$$

15) Net Present value:

$N.P.V =$ Present value of all cash inflows - Present value of all cash outflow.

if $N.P.V > 0$ Accept proposal.

if $N.P.V < 0$ Reject proposal.

16) Leasing: cost of Asset = Rent $\left[\frac{1 - (1+i)^{-n}}{i} \right]$

17) Valuation of Bond:

Price at which Bond = Present value of all future interest + Bond's maturity value.

18) Compounded Annual Growth Rate (CAGR):

$$A = P [1 + r]^t$$