COMPOUND INTEREST

COMPOUND INTEREST

- Concept of Compound Interest
- Problems related to missing rate, principal and time for Compound Interest & Practice from PPT
- Concept of half yearly, quarterly interest and monthly & Practice from PPT
- Problems related to interest/amount being n times of Principal & Practice from PPT
- Difference between SI and CI for 2 and 3 years & Practice from PPT
- Miscellaneous Questions
- Data Sufficiency Questions

COMPOUND INTEREST

Basic Terms:

- INTEREST: It is money paid by a borrower for using the lender's money for a specified period of time. Denoted by I.
- PRINCIPAL: The original sum borrowed. Denoted by P.
- TIME: The time period for which the money is borrowed. Denoted by T
- RATE OF INTEREST: The rate at which interest is calculated on the original sum. Denoted by R.
- AMOUNT: Amount is Sum of Principal plus Interest. Denoted by A

COMPOUND INTEREST

Compound interest is based on the principal amount and the interest that accumulates on it in every period.

- If the interest is calculated on yearly basis,

$$A = P(1 + \frac{R}{100})^N$$

- Where A = Amount

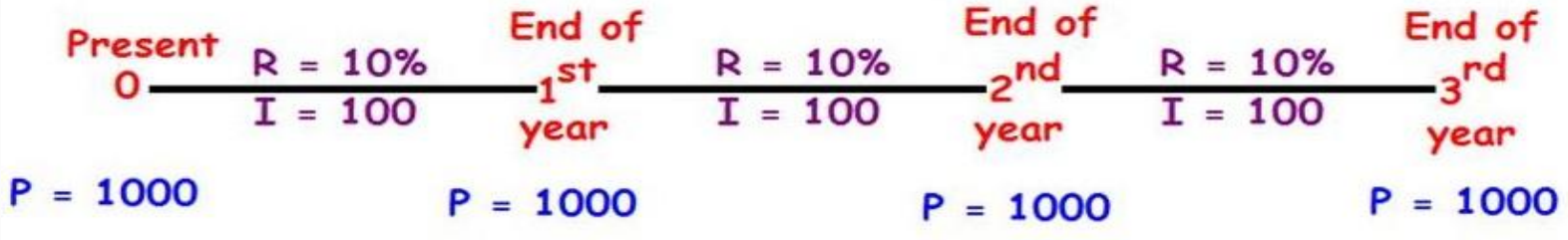
  P= Principal

  R= Rate per interest

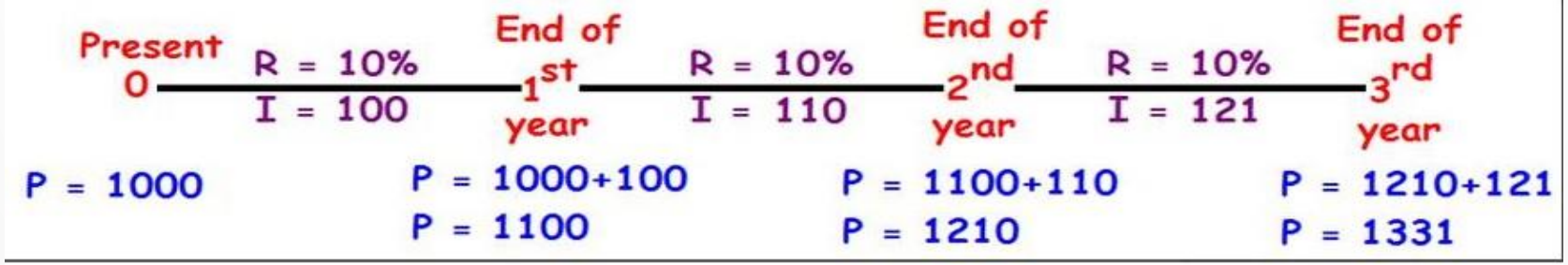
  N= No. of years.

COMPOUND INTEREST

SIMPLE INTEREST :



COMPOUND INTEREST :



COMPOUND INTEREST

IMPORTANT FORMULAS:

When the interest is compounded Annually:

Amount= $\mathbf{P\,(1 + R/100)^{n}}$

When the interest is compounded Half-yearly:

Amount = $\mathbf{P\,(1 + (R/2)/100)^{2n}}$

When the interest is compounded Quarterly:

Amount = $\mathbf{P\,(1 + (R/4)/100)^{4n}}$

When the rates are different for different years, say R1%, R2%, and R3% for 1 year, 2 years, and 3-year resp. Then,

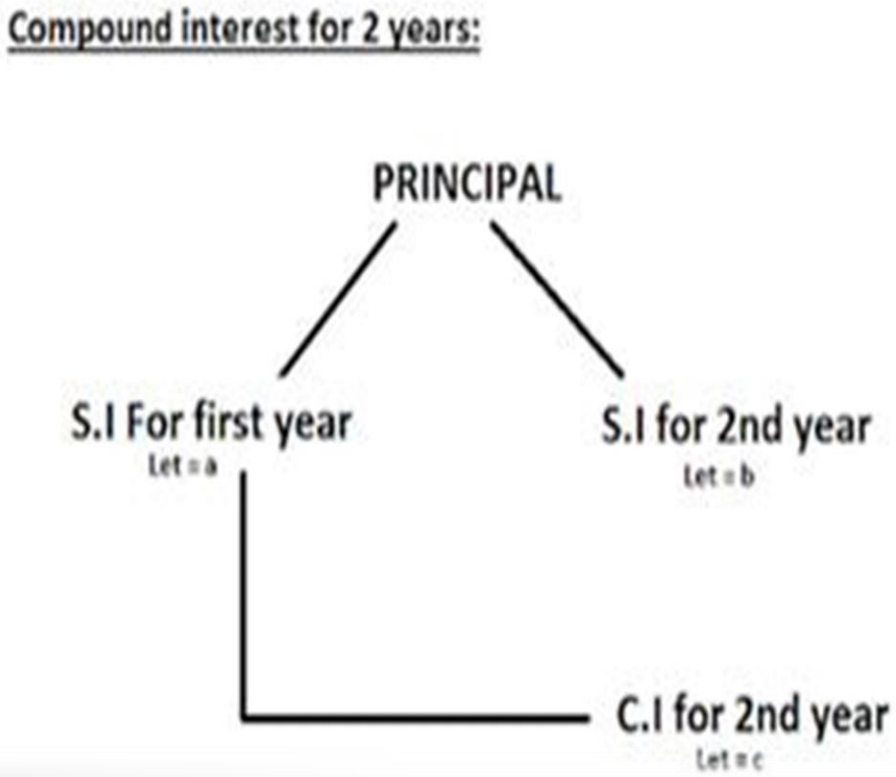
Amount = $\mathbf{P\,(1 + R1/100)\,(1 + R2/100)\,(1 + R3/100)}$

Present worth of ₹ x due n years hence is given by:

Present worth = $\mathbf{x/\,(1 + R/100)^{n}}$

COMPOUND INTEREST

Compound interest for 2 years



Compound interest means interest on interest.
Simple interest always accrues on only principal amount but CI also accrues on SI.
So if time period is 2 years, CI will also apply on SI of first year.

So	SI of 2 years	=	a+b
	CI of 2 years	=	a+b+c
	interest of 2nd year	=	b+c

Difference of 2 years CI ans SI = c

COMPOUND INTEREST

1. At what percent per annum will Rs. 3000/- amounts to Rs. 3993/- in 3 years if the interest is compounded annually?

A] 5 %

B] 7 %

C] 6 %

D] 10 %

COMPOUND INTEREST

2. A sum becomes Rs. 1,352 in 2 years at 4% per annum compound interest. The sum is

A] Rs. 1225

B] Rs. 1270

C] Rs. 1245

D] Rs. 1250

COMPOUND INTEREST

3. The time in which 80,000 amounts to 92,610 at 5% p.a. compound interest, interest being compounded annually is :

A] 1 (1/2) Years

B] 2 Years

C] 2 (1/2) Years

D] 3 Years

COMPOUND INTEREST

4. What will be the compound interest on a sum of Rs. 25,000 after 3 years at the rate of 12 % per annum.

A] Rs. 9000.30

B] Rs. 9720

C] Rs. 10123.20

D] Rs. 10483.20

COMPOUND INTEREST

5. The compound interest on Rs. 6,000 at 10% per annum for 1 (1 / 2) years, when the interest being compounded annually, is

A] Rs. 910

B] Rs. 870

C] Rs. 930

D] Rs. 900

COMPOUND INTEREST

6. The compound interest on Rs. 80,000 at 10% per annum for 1 (1 / 2) years, when the interest being compounded semi annually, is

A] Rs. 12500

B] Rs. 12600

C] Rs. 12610

D] Rs. 12900

COMPOUND INTEREST

7. The compound interest on Rs. 10,000 at 20% per annum for 2 Years 3 months, when the interest being compounded semi annually, is

A] Rs. 5355.61

B] Rs. 5565.31

C] Rs. 4265.62

D] Rs. 6254.32

COMPOUND INTEREST

8. The compound interest on Rs. 16,000 for 9 months at 20% per annum, interest being compounded quarterly, is:

A] Rs. 2520

B] Rs. 2524

C] Rs. 2522

D] Rs. 2518

COMPOUND INTEREST

9. The compound interest on Rs. 80,000 for 0.75 year at 40% per annum, interest being compounded quarterly, is:

A] Rs. 20640

B] Rs. 25430

C] Rs. 26480

D] Rs. 21460

COMPOUND INTEREST

10. If the rate of interest be 4% per annum for first year, 5% per annum for second year and 6% per annum for third year, then the compound interest of 10,000 for 3 years will be

A] Rs. 1600

B] Rs. 1625.80

C] Rs. 1575.20

D] Rs. 2000

COMPOUND INTEREST

11. A sum of Rs. 3000 amounts to Rs. 6000 in two years at compound interest. The interest for four years is :

A] Rs. 9000

B] Rs. 12000

C] Rs. 6000

D] Rs. 3000

COMPOUND INTEREST

12. A sum of money invested at compound interest doubles itself in 6 years. At the same rate of interest it will amount to eight times of itself in :

A] 15 Years

B] 12 Years

C] 18 Years

D] 10 Years

COMPOUND INTEREST

13. A sum of money becomes eight times in 3 years, if the rate is compounded annually. In how much time will the same amount at the same compound rate become sixteen times?

A] 6 Years

B] 4 Years

C] 8 Years

D] 5 Years

COMPOUND INTEREST

14. If the compound interest on a certain sum for 2 years at 3% per annum is Rs. 101.50, then the simple interest on the same sum at the same rate and for the same time will be:

A] Rs. 90

B] Rs. 95.50

C] Rs. 100

D] Rs. 98.25

COMPOUND INTEREST

15. The compound interest on a certain sum of money at 5% per annum for 2 years is 246. The simple interest on the same sum for 3 years at 6% per annum is

A] Rs. 435

B] Rs. 450

C] Rs. 430

D] Rs. 432

COMPOUND INTEREST

16. At a certain rate per annum, the simple interest on a sum of money for one year is 260 and the compound interest on the same sum for two years is 540.80. The rate of interest per annum is

A] 4 %

B] 8 %

C] 6 %

D] 10 %

COMPOUND INTEREST

17. The simple interest and compound interest (compounded annually) on a certain sum of money with a given rate for a period of 2 years are 900 and 954 respectively. The sum of money is

A] Rs. 3700

B] Rs. 3650

C] Rs. 3850

D] Rs. 3750

COMPOUND INTEREST

18. The compound interest on a certain sum of money at a certain rate for 2 years is Rs. 40.80 and the simple interest on the same sum is Rs. 40 at the same rate and for the same time. The rate of interest is

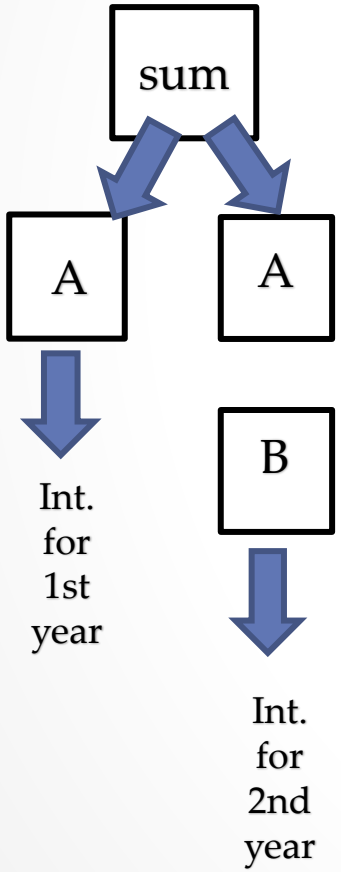
A] 2%

B] 3%

C] 4%

D] 5%

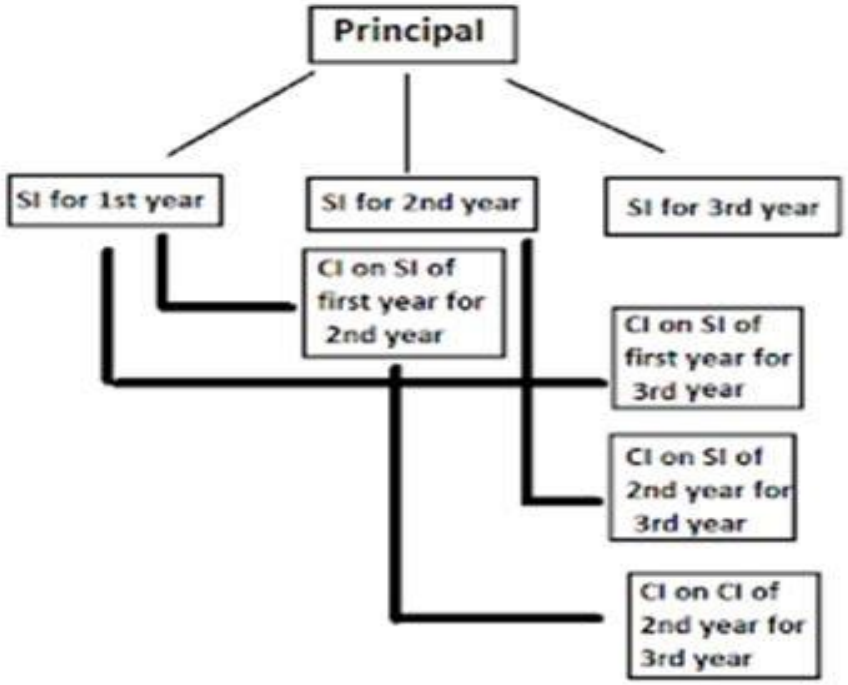
Difference between CI and SI for 2 years:

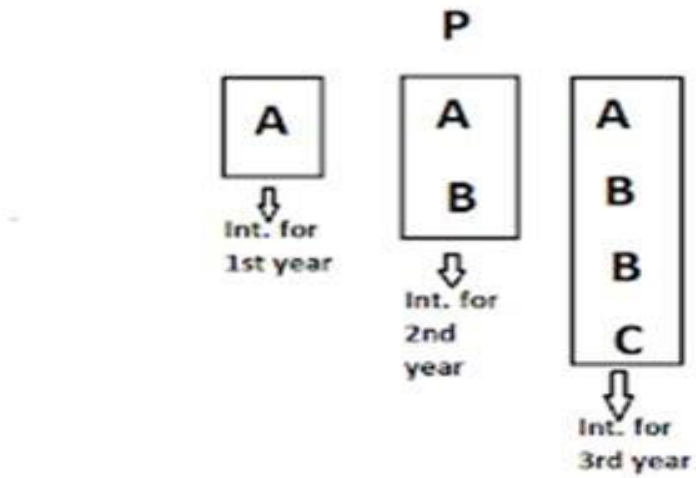


$$C.I - S.I \text{ for 2 years} = P\left(\frac{R}{100}\right)^2$$

COMPOUND INTEREST

Compound interest for 3 years





$$C.I - S.I \text{ for } 3 \text{ years} = P\left(\frac{R}{100}\right)^2\left(\frac{R}{100} + 3\right)$$

COMPOUND INTEREST

19. The difference between the simple and compound interest on a certain sum of money at 5% rate of interest per annum for 2 years is Rs. 15. Then the sum is :

A] Rs. 6500

B] Rs. 5500

C] Rs. 6000

D] Rs. 7000

COMPOUND INTEREST

20. The difference between compound interest and simple interest on 2500 for 2 years at 4% per annum is

A] Rs. 4

B] Rs. 45

C] Rs. 14

D] Rs. 40

COMPOUND INTEREST

21. If the difference of the compound interest and the simple interest on a sum of money for 3 years is Rs. 186. Find the sum of money, if the rate of interest in both cases be 10%.

A] Rs. 6000

B] Rs. 7200

C] Rs. 6500

D] Rs. 6600

COMPOUND INTEREST

22. The ratio of difference of CI and SI for 3 years to difference of CI and SI for 2 years is 25:8. Find the rate percent per annum.

A] 12.5%

B] 15%

C] 20%

D] 25%

COMPOUND INTEREST

23. The difference between the compound and the simple interest on a sum for 2 years at 10% per annum, when the interest is compounded annually, is 28. If the interest were compounded half - yearly, the difference in the two interests will be

A] Rs. 44

B] Rs. 28.35

C] Rs. 43.42

D] Rs. 43.49

COMPOUND INTEREST

24. On a certain sum of money lent out at 16% p.a. the difference between the compound interest for 1 year, payable half yearly, and the simple interest for 1 year is Rs. 56. The sum is

A] Rs. 1080

B] Rs. 7850

C] Rs. 8750

D] Rs. 5780

COMPOUND INTEREST

25. A sum of money amounts to 4,840 in 2 years and to 5,324 in 3 years at compound interest compounded annually. The rate of interest per annum is :

A] 10 %

B] 9 %

C] 11 %

D] 8 %

COMPOUND INTEREST

26. A sum of money invested at compound interest amounts to Rs. 650 at the end of first year and Rs. 676 at the end of second year. The sum of money is :

A] Rs. 600

B] Rs. 540

C] Rs. 625

D] Rs. 560

COMPOUND INTEREST

27. Rs. 6100 was partly invested in scheme A at 10% per annum CI for 2 years and partly in scheme B at 10% per annum simple interest for 4 years. Both the schemes give equal interest. How much was invested in scheme A?

A] Rs. 3250

B] Rs. 2500

C] Rs. 4000

D] None of these

COMPOUND INTEREST

28. What was the total compound interest on a sum after 3 years?

I. The interest after one year was Rs. 100 and sum was Rs. 1000.
II. The difference between simple and compound interest on a sum of Rs. 1000 at the end of 2 years was Rs. 10.

A] I alone sufficient while II alone not sufficient to answer
B] II alone sufficient while I alone not sufficient to answer
C] Either I or II alone sufficient to answer
D] Both I and II are not sufficient to answer
E] Both I and II are necessary to answer

COMPOUND INTEREST

29. What is the compound interest earned by James at the end of 2 years?

I. Simple interest at the same rate for one year is Rs. 1020 and the rate of interest is 12 percent per annum.
II. The amount invested is Rs. 8500.

A] I alone sufficient while II alone not sufficient to answer
B] II alone sufficient while I alone not sufficient to answer
C] Either I or II alone sufficient to answer
D] Both I and II are not sufficient to answer
E] Both I and II are necessary to answer

Any Doubts???