SNS COLLEGE OF TECHNOLOGY

An Autonomous Institution

Coimbatore-35

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

23GET275 – VQAR I

II YEAR/ III SEMESTER

UNIT 1 – QUANTITATIVE ABILITY I

TOPIC 5 – Simple interest and Compound Interest

Definition

Simple Interest: Simple interest can be defined as the principal amount of a loan or deposit a person makes into their bank account.

Compound Interest: Compound interest is the interest that accumulates and compounds over the principal amount

Differences

Simple Interest and Compound Interest Differences		
Parameter	**Simple Interest**	**Compound Interest**
Definition	Simple Interest can be defined as the sum paid back for using the borrowed money over a fixed period of time.	Compound Interest can be defined as when the sum principal amount exceeds the due date for payment, along with the rate of interest for a period of time.
Formula	S.I. = (P × T × R)/100	C.I. = $P(1+R/100)^t - P$
Return Amount	The return is much lesser when compared to compound interest.	The return is much higher.
Principal Amount	The principal amount is constant.	The principal amount keeps on varying during the entire borrowing period.
Growth	The growth remains quite uniform in this method.	The growth increases quite rapidly in this method.
Interest Charged	The interest charged on is for the principal amount.	The interest charged on it is for the principal and accumulated interest.

Example 1

Q1: What would be the annual interest accrued on a deposit of Rs. 10,000 in a bank that pays a 4 % per annum rate of simple interest?

Here, P = 10000, R = 4, T = 1
=> SI = P x R x T / 100
=> SI = 10000 x 4 x 1 / 100
=> SI = 400
Thus, the annual interest would be Rs. 400

Example 2

Q2) Arun took a loan of Rs.1400 with simple interest for as many years as the rate of interest. If he paid Rs.686 as interest at the end of the loan period, what was the rate of interest?

A) 6%
B) 8%
C) 7%
D) 4%

Example

Q3) At what rate percent per annum will a sum of money double in 8 years?

A) 12.5%

B) 13.5%

C) 11.5%

D) 14.5%

Let principal = P, Then, S.I.= P and Time = 8 years

We know that S.I. = PTR/100

Rate = [(100 x P)/ (P x 8)]% = 12.5% per annum

Example

Q4) A sum of money at simple interest amounts to Rs. 815 in 3 years and to Rs. 854 in 4 years. The sum is?

A) Rs. 650

B) Rs. 690

C) Rs. 698

D) Rs. 700

Solution :

S.I. for 1 year = Rs. (854 - 815) = Rs. 39.

S.I. for 3 years = Rs.(39 x 3) = Rs. 117.

Principal = Rs. (815 - 117) = Rs. 698.

Example

Q5) Find compound interest on Rs. 8000 at 15% per annum for 2 years 4 months, compounded annually?

A) 2109
B) 3109
C) 4109
D) 6109

Solution :

Time = 2 years 4 months = 2(4/12) years = 2(1/3) years.

Amount = Rs'. [8000 X (1+(15/100))^2 X (1+((1/3)*15)/100)]

= Rs. [8000 * (23/20) * (23/20) * (21/20)]

= Rs. 11109. .

:. C.I. = Rs. (11109 - 8000) = Rs. 3109.

Example

Q6)**Fi**nd the compound interest on Rs. 7500 at 4% per annum for 2 years, compounded annually?

A) Rs. 610
B) Rs. 612
C) Rs. 614
D) Rs. 616

Solution :

Amount=[7500×(1+4/100)2]=(7500×26/25×26/25)=8112

THANK YOU