DEPARTMENT OF AEROSPACE ENGINEERING

19GET275 – VQAR 1
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Interest formulas mainly refer to the formulas of simple and compound interests. The simple interest (SI) is a type of interest that is applied to the amount borrowed or invested for the entire duration of the loan, without taking any other factors into account, such as past interest (paid or charged) or any other financial considerations. Simple interest is generally applied to short-term loans, usually one year or less, that are administered by financial companies. The same applies to money invested for a similarly short period of time. The simple interest rate is a ratio and is typically expressed as a percentage.

On the other hand, the compound interest is the interest which is calculated on the principal and the interest that is accumulated over the previous tenure. Thus, the compound interest (CI) is also called "interest on interest". It plays an important role in determining the amount of interest on a loan or investment. The formulas for both the compound and simple interest are given below.

Interest Formulas for SI and CI

The **Interest formulas** are given as,

Formulas for Interests (Simple and Compound)	
SI Formula	S.I. = Principal × Rate × Time
CI Formula	$C.I. = Principal\ (1 + Rate)^{Time} - Principal$

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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	$S.I. = (P \times T \times R) / 100$	$C.I. = P(1 + R/100)^t - P$
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.

Solved Examples

Q.1: Amita borrowed ₹50,000 for 3 years at a rate of 3.5% per annum. Find the simple interest.
Solution: Given,
P = Rs 50,000

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R = 3.5%

T = 3 years

SI = (P × R ×T) / 100

SI = (50,000× 3.5 ×3) / 100 = ₹ 5250