S9	**Interest**	Aptitude

: Concept Check:

- Simple Interest (SI) = (P*R*T)/100
- If a sum of money becomes x times in n years at simple rate of interest, then the rate is calculated as

$$R = \frac{(x-1)*100}{n}$$

- Amount Due at the end of the time period is given by $A = p(1+\frac{r}{100})^t$ where, P: Principal (original amount), R: Rate of Interest (in %), T: Time period (yearly, half-yearly etc.)
- CI = A- P
- Difference between CI and SI when time given is 2 years = $P(R/100)^2$
- Difference between CI and SI when time given is 3 years = $P(R/100)^2(3+R/100)$
- *If interest is not compounded yearly, then*

$$A = P(1+\frac{r}{100 \times n})^{t \times n}$$

$Compound\ Interest = A - P$

Where, n= number of times compounding is done. For example if interest is compounded half yearly then n =2.

Principal: Rs. 1000		Rate: 10% per annum	
	1st year	2nd year	3rd year	Total
SI				
CI				

S. No.	Principal	Rate (per annum)	Time	Compound Interest	Amount
1	8000 Rs.	20% compounded Annually	3 Years		
2	640 Rs.	25% compounded Annually	2.5 Years		
3	2160 Rs.	16.67% compounded Half yearly	1 Years		
4	2401 Rs.	57.12% compounded Quarterly	1 Years		
5	8000 Rs.	20% Compounded Quarterly	0.75 Years		
6	6300 Rs.	For 1st year – 14.28% For 2nd year – 11.11 %	2 Years		
7	1000 Rs.	For 1st year – 9 % For 2nd year – 12 %	2 Years		
8	9600 Rs.	For 1st year – 8.33 % For 2nd year – 10 % For 3rd year - 12.5 %	3 Years		

S.No.	Questions	Worksheet
1	(i) What is the SI on Rs. 7500/- at the rate of 12% per annum for 8 years? (ii) A man borrowed Rs 15000/- at the rate of 24% SI and to clear the debt after 6years, how much he has to return (iii) A man has to pay Rs 1500 as interest after 3 years at the rate of 10%. What amount he has taken?	
2	A sum of money at simple interest amounts to Rs. 875 in 3.5 years and to Rs. 900 in 4years. The sum is	
3	Raju invested into two different schemes, P and Q at simple interest rate,an amount of Rs. 27,000. Rate of interest for scheme P & Q were 5 % p.a. and 15% p.a. respectively. If the total amount of simple interest earned in 4 years be Rs. 12600, what was the amount invested in Scheme P?	
4	A money-lender claims he lends money at simple rate of interest of 10% per annum. But he cleverly tricks the farmers by including the interest amount in the principal when he calculates it every six months. The effective annual rate of interest he is charging is:	
5	The sum of interest on a sum of money is 1/4 of the principal, and the number of years is equal to the rate of interest. What will be the rate percent?	
6	The rate of interest for 2 years is 3%, 4 years is 6%,and for another 4 years is 4%.If a man gets interest of Rs. 3800 for 8 years, Calculate the principal amount.	
7	A sum of money becomes 5 times in 30 years. Find the rate of interest ?	
8	A sum was put at SI at a certain rate for 4 years. If the sum would have put at a 4% higher rate, it could yield Rs 800 more. What will be the principal?	
9	(i) An amount of Rs 1000 equates to Rs 1728 in 3 years when interest is compounded annually. What will be the rate per annum? (iii) An amount of Rs 1000 amounts to Rs 2197at the rate of 30% when interest is compounded annually. What will be the no of years?	
10	Find difference between CI and SI on Rs. 600 for one year at 10% per annum if CI is considered half yearly.	
11	Difference between CI and SI = Rs. 20 Rate = 4% p.a.c.a. Time = 2 Years Principal = ?	
12	Difference between CI and SI = 4300 Rs. Rate = 7.14% p.a.c.a. Time = 3 Years Principal = ?	
13	Compound interest for 3rd year = 2000Rs. Rate = 11.11% p.a.c.a. Time = 3 Years Principal = ?	

14	A certain sum of money under compound interest becomes 7 times of itself in 6 years. Find (I) Rate of Interest (II) In what time it will be 343 times of itself ?	
15	Equal sums of money are deposited in two different banks by M/s Enterprises, one at compound interest (compounded annually) and the other at simple interest, both at 5% per annum. If after two years, the difference in the amounts comes to Rs. 200, what are the amounts deposited with each bank?	
16	A sum of money invested at CI amounts to Rs. 1800 in 4 years and 1900 in 5 years. Find the rate of interest per annum?	
17	Radheshyamtakes money from the ICICI at lower rate of interest and saves in a scheme, which gives him a compound interest of 20%, compounded annually. Find the least number of complete years after which his sum will be more than double.	
18	An amount of 10500 is invested in a compound interest scheme for 4 years. The rate of interest is 5% for the first year, 7.14 % for next 2 years, and for the last year, it is 4%. The final amount is:	
19	The simple interest accrued on an amount of Rs.27, 500 at the end of three years is Rs.10, 230. What would be the approximate compound interest accrued on the same amount at the same rate in the same period?	
20	A sum of money is accumulating at compound interest at a certain rate of interest. If simple interest instead of compound were reckoned, the interest for first two years would be diminished by Rs 20 and that for the first three years by 61. Find the sum.	