

EXERCISE 8A

For SSC GD & MTS Exams

- Eight copies of the book can be bought for a certain sum payable at the end of the year and ten copies of the same book can be bought for the same sum in cash money. What is the rate percentage of the interest? [SSC MTS 20/10/2021 (Shift-2)]

(a) 30%	(b) 25%
(c) 10%	(d) 15%
- The simple interest on a sum for a certain number of years, the same as the rate percentage of the interest, is equal to the sum itself. The number of years is equal to: [SSC MTS 02/08/2019 (Shift-1)]

(a) 5	(b) 10
(c) 8	(d) 1
- If the simple interest on rupees 28000 at some rate for three years, is rupees 225 more than the simple interest on ₹ 27000 at the same rate for 3 years, then what will be the simple interest on ₹ 35500 for $2\frac{3}{5}$ years at the same rate? [SSC MTS 21/08/2019 (Shift-3)]

(a) ₹ 6966.50	(b) ₹ 6922.50
(c) ₹ 6953.00	(d) ₹ 6723.50
- The simple interest on ₹ x for m years at the rate of r % is equal to the same on ₹ y for n years at the rate of s %, then $\frac{x}{y}$ is equal to: [SSC MTS 16/08/2019 (Shift-1)]

(a) $\frac{nr}{ms}$	(b) $\frac{ns}{mr}$
(c) $\frac{ms}{nr}$	(d) $\frac{mr}{ns}$
- A sum doubles in seven years at simple interest. In how many years will the sum become five times the original sum? [SSC MTS 09/08/2019 (Shift-2)]

(a) 35	(b) 21
(c) 28	(d) 30
- A certain sum amount ₹ 20720 in four years and ₹ 24080 in years at certain rate of simple interest the same (in ₹) is [SSC MTS 13/08/2019 (Shift-2)]

(a) 11000	(b) 12000
(c) 14000	(d) 15000
- The simple interest at the end of the 3 years on a sum of ₹ 2800 is ₹ 420. What will be the simple interest on ₹ 3200 for the same period at the same rate? [SSC MTS 09/08/2019 (Shift-3)]

(a) ₹ 480	(b) ₹ 560
(c) ₹ 440	(d) ₹ 640
- If the ratio of principle and simple interest for 5 years is 10:7, then the rate of interest(per annum) is: [SSC MTS 09/08/2019 (Shift-1)]

(a) 15%	(b) 20%
(c) 10%	(d) 14%
- A sum of ₹ 10000 invested in three scheme of simple interest. The annual interest rate are respectively, 4%, 6% and 10%. ₹ 4000 were invested in the first scheme. If the total interest earned after 5 years is ₹ 2800, then how much money was invested in third scheme? [SSC MTS 08/08/2019 (Shift-3)]

(a) ₹ 1500	(b) ₹ 5000
(c) ₹ 1000	(d) ₹ 3000
- A sum of ₹ 800 invested on simple interest becomes ₹ 1200 in 8 years. What will be the simple interest for 6 years on the sum at the same rate of interest? [SSC MTS 08/08/2019 (Shift-2)]

(a) ₹ 240	(b) ₹ 210
(c) ₹ 250	(d) ₹ 300
- A sum of ₹ 1500 is invested at simple interest for x months. If the rate of interest is $\frac{x}{8}$ % per annum, Then the sum grows to ₹ 1590. What is the value of x? [SSC MTS 07/08/2019 (Shift-1)]

(a) 3.2	(b) 2.4
(c) 32	(d) 24
- ₹ 480 is invested at simple interest. It becomes ₹ 520 after 20 months. What is the interest rate per annum? [SSC MTS 06/08/2019 (Shift-3)]

(a) 6%	(b) 5%
(c) 8%	(d) 4%
- If ₹ 1000 has been invested at 12.5% simple interest per annum for two years, then what is the amount? [SSC MTS 06/08/2019 (Shift-2)]

(a) 1125	(b) 1250
(c) 1325	(d) 1275

2 ■ SSC Maths

14. The simple interest on a principal for 6 months at an interest rate of 10% per annum is ₹ 100. What is the principal? [SSC MTS 05/08/2019 (Shift-1)]

- (a) ₹ 1000 (b) ₹ 2000
(c) ₹ 1500 (d) ₹ 2500

15. The simple on a sum for a certain number of years, the same as the rate percentage of the interest is equal to the sum itself. The number of years is equal to: [SSC MTS 13/06/2019 (Shift-2)]

- (a) 5 (b) 10
(c) 8 (d) 1

SOLUTIONS

1. (b) $R = \frac{SI \times 100}{P \times T} = \frac{2 \times 100}{8 \times 1} = 25\%$

2. (b) According to question

$P = SI$ and $T = R$

$T = \frac{SI \times 100}{P \times R} \Rightarrow T = \frac{P \times 100}{P \times T}$

$T^2 = 100$

$T = 10$ years

3. (b) $R = \frac{225 \times 100}{1000 \times 3} = 7.5\%$

$SI = 35500 \times \frac{7.5}{100} \times 13$

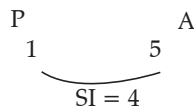
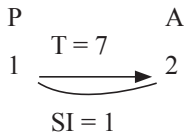
$= ₹ 6922.50$

4. (b) According to question

$\frac{x \times m \times r}{100} = \frac{y \times n \times s}{100}$

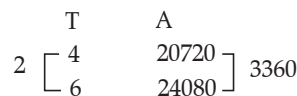
$\frac{x}{y} = \frac{ns}{mr}$

5. (c)



$T = 4 \times 7 = 28$ years

6. (c)



$2 = 3360$

$1 = 1680$

4 years $SI = 4 \times 1680$

$= 6720$

$P = 20720 - 6720$

$P = ₹ 14000$

7. (a) $R = \frac{420 \times 100}{2800 \times 3} = 5\%$

$SI = 3200 \times \frac{5}{100} \times 3 = ₹ 480$

8. (d) $R = \frac{7 \times 100}{10 \times 5} = 14\%$

9. (c) Ist scheme $SI = 4000 \times 5 \times \frac{4}{100} = ₹ 800$

Remaining $SI = 2800 - 800 = ₹ 2000$

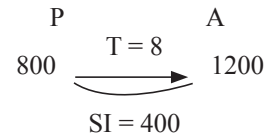
Let the money of IIIrd scheme is P

$(600 - P) \times \frac{6 \times 5}{100} + P \times \frac{10 \times 5}{100} = 2000$

$20P = 2000 \times 100 - 180000$

$P = \frac{20000}{20} = ₹ 1000$

10. (d)



SI for 6 years $= \frac{400}{8} \times 6$

$= ₹ 300$

11. (d) $1500 \times \frac{x}{12} \times \frac{x}{8 \times 100} = 90$

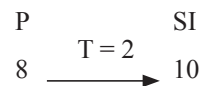
$x^2 = \frac{90 \times 32}{5} = 576$

$x = 24$

12. (b) 20 months $= \frac{20}{12}$ years $= \frac{5}{3}$ years

$R = \frac{40 \times 100}{480 \times \frac{5}{3}} = 5\%$

13. (b) $12.5\% = \frac{1}{8}$



$A = \frac{10}{8} \times 1000 = ₹ 1250$

14. (b) 6 months = $\frac{6}{12} = \frac{1}{2}$ years

$$P = \frac{100 \times 100}{\frac{1}{2} \times 10} = ₹ 2000$$

15. (b) According to the question

$$P = SI, T = R$$

$$T = \frac{P \times 100}{P \times T}$$

$$T^2 = 100$$

$$T = 10 \text{ Years}$$

EXERCISE 8B

For SSC CHSL Exam

1. A man invested an amount of Rs 105750 at simple interest in the name of his son, daughter and his wife in such a way that they get the same interest after 3, 4 and 5 years respectively. if the rate of interest is 5% per annum, then the amount invested for the wife is:

[SSC CHSL 12/08/2021 (Shift-3)]

- (a) 27000 (b) 28000
(c) 25000 (d) 30000

2. A person invested a total of ₹ 9,000 in three parts at 3%, 4% and 6% per annum on simple interest. At the end of the year, he received equal interest in all three cases. The amount invested at 6% is :

[SSC CHSL 16/10/2020 (Shift-1)]

- (a) ₹2,000 (b) ₹3,000
(c) ₹4,000 (d) ₹5,000

3. A man takes a loan of some amount at some rate of simple interest. After three years, the loan amount is doubled and the rate of interest is decreased by 2%. After 5 years, if the total interest paid on the whole is ₹ 13,600, which is equal to the same when the first amount was taken for $11\frac{1}{3}$ years, then the loan

taken initially is:

[SSC CHSL 14/10/2020 (Shift-2)]

- (a) ₹13,600 (b) ₹12,500
(c) ₹10,000 (d) ₹12,000

4. A sum of ₹ 10,000 was borrowed at the rate of simple interest. After four months, ₹ 6000 more was borrowed and rate of interest on the total principal was doubled than that of the previous rate. At the end of the years, 2800 was paid as the interest. Find the rate that was applicable in the initial.

[SSC CHSL 12/10/2020 (Shift-1)]

- (a) 14% (b) 16%
(c) 12% (d) 10%

5. A certain sum was invested on simple interest. The amount to which it had grown in five years was $1\frac{1}{4}$ times the amount to which it had grown in three years. The percentage rate of interest was:

[SSC CHSL 11/07/2019 (Shift-1)]

- (a) 10% (b) 20%
(c) 25% (d) 15%

6. A borrows a sum of ₹ 1000 from his friend B on 31 December 2015 on the condition that he will return the same after one year with simple interest at 12%. however, A gets into a position of returning the money on 1 May 2016. How much amount he has return to B?

[SSC CHSL 10/07/2019 (Shift-1)]

- (a) ₹1,331.5 (b) ₹1,045
(c) ₹1,120 (d) ₹1,040

SOLUTIONS

1. (a) $5\% = \frac{1}{20}$

	P	T =	SI
Son	(20	→	3) × 20
		T = 4	
Daughter	(20	→	3) × 15
		T = 5	
Wife	(20	→	3) × 12

SI of Son, Daughter and Wife are same

	P	SI
Son	400	60
Daughter	300	60
Wife	240	60
	940	

$$\text{Wife's principal} = \frac{240}{940} \times 105750$$

$$= ₹ 27000$$

2. (a) $3\% = \frac{3}{100}$; $4\% = \frac{4}{100}$; $6\% = \frac{6}{100}$

	P	SI
400 = (100		3) × 4
300 = (100		4) × 3
200 = (100		6) × 2
	900	

$$\begin{aligned} \text{Amount invested at } 6\% &= \frac{200}{900} \times 9000 \\ &= ₹ 2000 \end{aligned}$$

$$3. (c) \frac{P \times R \times 34}{100 \times 3} = 13600$$

$$PR = 120000$$

$$\frac{P \times R \times 3}{100} + 2P \times \frac{5}{100} \times (R - 2) = 13600$$

$$13PR - 20P = 1360000$$

$$20P = 1560000 - 1360000$$

$$P = \frac{200000}{20}$$

$$P = ₹ 10000$$

$$4. (d) 12000 \times \frac{R}{100} \times \frac{4}{12} + 18000 \times \frac{2R}{100} \times \frac{8}{12} = 2800$$

$$40R + 240R = 2800$$

$$280R = 2800$$

$$R = \frac{2800}{280}$$

$$R = 10\%$$

$$5. (b) 1\frac{1}{4} = \frac{5}{4}$$

$$2 \begin{bmatrix} T & A & P \\ 3 & 4 & 4 - 1.5 = 2.5 \\ 5 & 5 & 1 \end{bmatrix}$$

$$2y = 1$$

$$1y = 0.5(\text{SI})$$

$$\therefore R = \frac{1.5 \times 100}{2.5 \times 3} = 20\%$$

$$6. (d) T = 122 \text{ days} = \frac{122}{366} \text{ years}$$

[∵ 2016 is a leap year]

$$SI = 1000 \times \frac{12}{100} \times \frac{1}{3} = ₹ 40$$

$$A = 1000 + 40 = ₹ 1040$$

EXERCISE 8C

For SSC CGL & CPO Exams

1. A certain sum amounts to ₹ 81840 in 3 years and to ₹ 92,400 in 5 years at $x\%$ p.a., under simple interest. If the rate of interest become $(x + 2)\%$, then in how many years will same sum double itself?

[SSC CGL 20/08/2021 (Shift-1)]

- (a) 12.5 (b) 8
(c) 10 (d) 20

2. A sum of ₹ 5,000 is divided into two parts such that the simple interest on the first part for $4\frac{1}{5}$ years at $6\frac{2}{3}\%$ p.a. is double the simple interest on the second part for $2\frac{3}{4}$ years at 4% per annum. The ratio of the second part to the first part is:

[SSC CGL Tier II 03/02/2022]

- (a) 11:14 (b) 11:13
(c) 14:11 (d) 13:11

3. A sum of ₹ 10,500 amount to ₹ 13825 in $3\frac{4}{5}$ years at a certain rate percent per annum simple interest. What will be the simple interest on the same sum for 5 years at double the earlier rate?

[SSC CGL Tier II 13/09/2019]

- (a) ₹ 8,470 (b) ₹ 8,750
(c) ₹ 8,670 (d) ₹ 8,560

4. A person invested one-fourth of the sum of ₹ 25000 at a certain rate of simple interest and the rest at 4% p.a. higher rate. If the total interest received for 2 years is ₹ 4,125. What is the rate at which the second sum was invested?

[SSC CGL Tier II 13/09/2019]

- (a) 9.5% (b) 9.25%
(c) 5.255 (d) 7.5%

5. A sum lent out at simple interest amounts to ₹ 6076 in 1 year and ₹ 7504 in 4 years. The sum and the rate of interest p.a are respectively

[SSC CGL Tier II 12/09/2019]

- (a) ₹ 5600 and 9% (b) ₹ 5600 and 8.5%
(c) ₹ 5400 and 9% (d) ₹ 5400 and 10%

6. A person invested a sum of ₹ 18,600 at $x\%$ p.a. and another sum that is twice the former at $(x + 2)\%$ p.a. both at a simple interest. If the total interest earned on both investment for $3\frac{1}{2}$ years is ₹ 23,110.50,

The the rate of interest p.a on the second investment is

[SSC CPO 11/12/2019 (Shift-1)]

- (a) 11% (b) 10.5%
(c) 13% (d) 12.5%

7. A certain sum (in ₹) is invested at simple interest at $y\%$ per annum for $3\frac{1}{2}$ years. Had it been invested at $(y + 4)\%$ per annum at simple interest, it would have fetches ₹ 4,452 more as interest. What is the sum.

[SSC CPO 11/12/2019 (Shift-3)]

- (a) ₹ 42,400 (b) ₹ 31,800
(c) ₹ 30,400 (d) ₹ 42,800

8. Sudeep invested $\frac{1}{8}$ of certain sum at 5% p.a for two years and $\frac{3}{5}$ of the sum at 6% p.a for two years and the remaining at 10% p.a for two years. If the total interest received is ₹ 1,674, then the total sum invested is: [SSC CPO 9/12/2019 (Shift-1)]
- (a) ₹ 12,500 (b) ₹ 12,000
(c) ₹ 10,500 (d) ₹ 13,000
9. The rate of simple interest on a sum of money is 5% p.a. for the first four years, 8% p.a for the next three years and 10% p.a for the period beyond the 7 years. If the simple interest accrued by the sum over a period of 10 years is ₹ 1,850, then the sum is [SSC CGL 06/03/2020 (Shift-3)]
- (a) ₹ 1,650 (b) ₹ 1,500
(c) ₹ 2,750 (d) ₹ 2,500
10. The difference in the compound interest on a certain sum at 10% p.a for one year. When the interest is compounded half yearly and yearly, is ₹ 88.80. What is the simple interest on the same sum for $1\frac{2}{3}$ years at the same rate? [SSC CGL 04/03/2020 (Shift-2)]
- (a) ₹ 5,916 (b) ₹ 5,986
(c) ₹ 5,980 (d) ₹ 5,920
11. The simple interest on a certain sum at 15% p.a. For three years is ₹ 7200. The sum is [SSC CPO 15/03/2019 (Shift-1)]
- (a) 16000 (b) 24000
(c) 32000 (d) 48000
12. At what percent per annum with simple interest will a sum of money double in 12.5 years? [SSC CPO 16/03/2019 (Shift-3)]
- (a) 8 (b) 12.5
(c) 10 (d) 6
13. A sum of ₹ 12,800 is invested partly at 15% per annum and the remaining at 12% per annum simple interest. If the total interest at the end of 3 years is ₹ 5085. Then how much money was invested at 15% per annum. [SSC CPO 12/03/2019 (Shift-3)]
- (a) 5200 (b) 7500
(c) 5800 (d) 5300

SOLUTIONS

1. (c)

$$2 \left[\begin{array}{cc} T & A \\ 3 & 81840 \\ 5 & 92400 \end{array} \right] 10560$$

$$R = \frac{5280 \times 100}{66000}$$

$$R = 8\%$$

$$2 = 10560$$

$$1 = 5280$$

$$\text{New } R = 8 + 2 = 10\%$$

$$T = \frac{P \times 100}{P \times 10} = 10 \text{ years}$$

2. (c) Let first part = P

Second part = Q

$$2Q \times \frac{11}{4} \times \frac{4}{100} = P \times \frac{21}{5} \times \frac{20}{3 \times 100}$$

$$\Rightarrow 11Q = 14P$$

$$\Rightarrow \frac{Q}{P} = \frac{14}{11}$$

$$\Rightarrow Q : P = 14 : 11$$

3. (b)

$$\begin{array}{ccc} P & T = \frac{19}{5} & A \\ 10500 & \longrightarrow & 13825 \\ & \text{SI} = 3325 & \end{array}$$

$$\frac{19}{5} = 3325$$

$$1 = 875$$

$$\text{Now, } R \text{ is double } 1 = 875 \times 2 = 1750$$

$$\text{SI of 5 year} = 5 \times 1750$$

$$= ₹ 8750$$

$$4. (b) \frac{1}{4} \times 25000 = 6250, 18750$$

$$6250 \times 2 \times \frac{R}{100} + 18750 \times 2 \times \frac{(R+4)}{100} = 4125$$

$$125R + 375R + 1500 = 4125$$

$$\Rightarrow 500R = 2625$$

$$\Rightarrow R = 5.25\%$$

$$\text{Rate of II}^{\text{nd}} \text{ sum} = R + 4 = 5.25 + 4 = 9.25\%$$

5. (b)

$$3 \left[\begin{array}{cc} T & A \\ 1 & 6076 \\ 4 & 7504 \end{array} \right] 1428$$

$$3 = 1428$$

$$1 = 476$$

$$\Rightarrow P = 6076 - 476$$

$$\Rightarrow P = ₹ 5600$$

$$\therefore R = \frac{476}{5600} \times 100 = 8.5\%$$

$$6. (d) 18600 \times \frac{7x}{2 \times 100} + 2 \times 18600 \times \frac{7(x+2)}{2 \times 100}$$

$$= 23110.5$$

$$651x + 1302x + 2604 = 23110.50$$

$$x = \frac{20506.50}{1953}$$

$$x = 10.5\%$$

$$\text{Rate of II}^{\text{nd}} \text{ sum} = x + 2 = 10.5 + 2 = 12.5\%$$

$$7. (b) T = 3\frac{1}{2} = \frac{7}{2}$$

$$\text{Now, } P \times \frac{7}{2} \times \frac{4}{100} = 4452$$

$$P = \frac{4452 \times 2 \times 100}{7 \times 4}$$

$$P = ₹ 31800$$

$$8. (b) \text{I}^{\text{st}} \text{ part} = \frac{1}{8} = \frac{5}{40}$$

$$\text{II}^{\text{nd}} \text{ part} = \frac{3}{5} = \frac{24}{40}$$

$$\text{III}^{\text{rd}} \text{ part} = 1 - \frac{29}{40} = \frac{11}{40}$$

$$5 \times 5 \times \frac{2}{100} + 24 \times 6 \times \frac{2}{100} + 11 \times 10 \times \frac{2}{100} = 1674$$

$$50 + 288 + 220 = 167400$$

$$1 = \frac{167400}{558} = 300$$

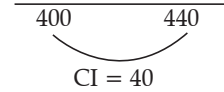
$$\Rightarrow P = 40 \times 300 = ₹ 12000$$

$$9. (d) 5 \times \frac{4}{100} + 8 \times \frac{3}{100} + 10 \times \frac{3}{100} = 1850$$

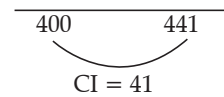
$$20 + 24 + 30 = 18500$$

$$\therefore 1 = \frac{18500}{74} = ₹ 2500$$

$$10. (d) \text{Yearly CI } 10\% = \frac{1}{10}$$

P	A
10	11
× 40	× 40
400	440
	

$$\text{Half Yearly } \frac{10}{2}\% = \frac{1}{20}$$

T	A
20	21
20	21
400	441
	

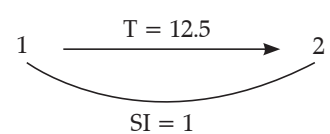
$$\text{Difference of CI} = 1 = ₹ 88.80$$

$$P = 400 \times 88.80 = ₹ 35520$$

$$SI = 35520 \times \frac{5}{3} \times \frac{10}{100} = ₹ 5920$$

$$11. (a) P = \frac{7200 \times 100}{15 \times 3} = ₹ 16000$$

12. (a)

P	A
1	2
	

$$R = \frac{1 \times 100}{12.5} = 8\%$$

$$13. (d) P \times 15 \times \frac{3}{100} + (12800 - P) \times 12 \times \frac{3}{100} = 5085$$

$$45P - 36P = 508500 - 460800$$

$$\Rightarrow P = \frac{47700}{9}$$

$$\Rightarrow P = ₹ 5300$$