

Quiz Date: 24<sup>th</sup> February 2020

Q1. Simple interest for a period of two year is given as Rs. 1800 and the difference between CI and SI for two years is Rs. 270. Find the CI for three years given that sum is same and rate of interest is also same ?

- (a) None of these
- (b) Rs. 3551
- (c) Rs. 3135
- (d) Rs. 2721
- (e) Rs. 3591

Q2. Shivam's investment in scheme B offering simple interest @12% p.a. is 60% more than the sum invested by Shivam in scheme A offering compound Interest (compounded annually) @10% p.a. If at the end of two years, the total interest received from both the schemes together was Rs. 4,752. What was the difference between the sum invested in both the schemes?

- (a) Rs.3,500
- (b) Rs.6,000
- (c) Rs.4,800
- (d) Rs.4,200
- (e) Rs.5,500

Q3. Prashant invested certain amount at 12% p.a. SI and at 20% p.a. CI compounding annually for 3 years and 2 years respectively and amount invested by him at SI is Rs.4000 more than amount invested by him at CI. If difference of SI received and CI received is Rs.1040, then find amount invested by him at SI is what percent of amount invested by him at CI.

- (a) 200%
- (b) 180%
- (c) 150%
- (d) 220%
- (e) 110%

Q4. Arun invested Rs. 'p' in a scheme for 2 years which offered simple interest at the rate of 22.5% per annum and Pinki invested Rs. (p + 4000) in another scheme for same period of time on C.I. at the rate of 15% per annum. If Arun got Rs 750 more as the interest then find the average of amount invested by them?

- (a) Rs 15,000
- (b) Rs 16,000
- (c) Rs 14,000
- (d) Rs 18,000
- (e) Rs 20,000

Q5. Anurag invested 80000 Rs. at the rate of 15% compound interest. If first year interest calculated half yearly and second year calculate annually, then find the total compound interest Anurag gets after 2 year?

- (a) Rs. 26317.5
- (b) Rs. 28345
- (c) Rs. 28276.5
- (d) Rs. 32425
- (e) Rs. 22324



Q6. Veer invested a sum of Rs. 50000 into two schemes A & B both offering at 10% per annum. The difference between C.I for 1.5 years on schemes A but interest calculated on half yearly basis and S.I for same time on schemes B is Rs. 117. If Rs 2400 more invested than scheme A in another scheme C at same rate of interest, then find out the simple interest 3 years after? (given that simple interest on scheme B is greater than compound interest on scheme A)

- (a) Rs. 7920
- (b) Rs. 8940
- (c) Rs. 9860
- (d) Rs. 11220
- (e) Rs. 8440

Q7. A man invested an amount of Rs. 35910 in a scheme offering compound interest at rate of  $14\frac{2}{7}\%$  for first year,  $22\frac{2}{9}\%$  for second year and  $6\frac{1}{4}\%$  for remaining years. Find the C.I. offered to him at the end of 2 year and 8 months?

- (a) Rs. 14322
- (b) Rs. 19272
- (c) Rs. 18723
- (d) Rs. 15423
- (e) Rs. 16340

Q8. Rs. 6000 is invested at  $16\frac{2}{3}\%$  per annum simple interest. If the interest is added to the principal after every 3 years. Then after what time amount will become Rs. 15000?

- (a)  $5\frac{1}{3}$  years
- (b)  $5\frac{2}{3}$  years
- (c) 7 years
- (d)  $6\frac{1}{3}$  years
- (e)  $6\frac{2}{3}$  years

Q9. John borrowed some money at the rate of 4 p.c.p.a for the first three years, at the rate of 8 p.c.p.a for the next two years and at the rate of 9 p.c.p.a for the period beyond 5 years. If he pays a total simple interest of Rs 19550 at the end of 7 years, how much money did he borrow?

- (a) Rs 39500
- (b) Rs 42500
- (c) Rs 41900
- (d) Rs 43000
- (e) Rs 45500

Q10. A sum of Rs 18,750 is left in a will by a father to be divided between two sons, whose present age is 12 and 14 years respectively, such that when they attain maturity at 18, the amount (Principal + interest) received by each at 5% S.I. will be the same. Find the sum allotted at present to each son.

- (a) Rs 9500, Rs 9250
- (b) Rs 8000, Rs 1750
- (c) Rs 9000, Rs 9750
- (d) Rs 8500, Rs 10250
- (e) None of these

Q11. Abhishek invested two equal amounts in scheme A, which offers CI at  $16\frac{2}{3}\%$  p.a., and in scheme B which offers SI at  $22\frac{2}{9}\%$  p.a. If difference between 3<sup>rd</sup> year SI and CI is Rs.45, find sum invested in each scheme?

- (a) Rs. 9430
- (b) Rs. 9720
- (c) Rs. 8230
- (d) Rs. 9820
- (e) Rs. 8730

Q12. The simple interest accrued on an amount of Rs. 22,500 at the end of four years is Rs. 10,800. What would be the compound interest accrued on the same amount at the same rate of interest at the end of two years?

- (a) Rs. 16,908
- (b) Rs. 5,724
- (c) Rs. 28,224
- (d) Rs. 8,586
- (e) Rs. 5424



### Solutions

S1. Ans.(e)

Sol.

Let sum be Rs. P

$$S.I. = \frac{P \times R \times t}{100}$$

$$\frac{1800}{100} = \frac{P \times R \times 2}{100}$$

$$\frac{PR}{100} = 900$$

We know,

$$\text{Difference} = \frac{PR^2}{100^2}$$

$$270 = \frac{PR}{100} \times \frac{R}{100}$$

$$270 = 900 \times \frac{R}{100}$$

$$R = 30\%$$

$$P = \frac{90000}{30} = \text{Rs. } 3000$$

$$\therefore CI = P \left[ \left( 1 + \frac{R}{100} \right)^3 - 1 \right]$$

$$= 3000 \left[ \left( 1 + \frac{30}{100} \right)^3 - 1 \right] = \text{Rs. } 3591$$

S2. Ans.(c)

Sol.

Let sum invested by Shivam in Scheme-A be 10x

$$\text{And scheme - B} = 10x \times \frac{160}{100}$$

$$= 16x$$

ATQ,

$$\frac{16x \times 12 \times 2}{100} + \left[ 10x \left( 1 + \frac{10}{100} \right)^2 - 10x \right] = 4752$$

$$\Rightarrow \frac{96x}{25} + [10x(1.21) - 10x] = 4752$$

$$\Rightarrow \frac{96x}{25} + [2.1x] = 4752$$

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$$\Rightarrow x = 800$$

Hence, sum invested by Shivam in Scheme - A =  $10x = \text{Rs. } 8,000$

And sum invested by Shivam in Scheme - B =  $16x = \text{Rs. } 12,800$

So, required difference =  $12,800 - 8,000$

$$= \text{Rs. } 4,800$$

S3. Ans.(b)

Sol.

Let amount invested by Prashant at SI and at CI be Rs  $P_1$  & Rs  $P_2$  respectively.

So,

$$P_1 - P_2 = 4000$$

$$P_1 = 4000 + P_2 \quad \dots(i)$$

Atq,

$$\text{Equivalent interest of amount invested at CI @ } 20\% \text{ p.a. for 2 yrs} = 20 + 20 + \frac{20 \times 20}{100}$$

$$= 44\%$$

Now,

$$\frac{P_1 \times 12 \times 3}{100} - \frac{P_2 \times 44}{100} = 1040$$

$$9P_1 - 11P_2 = 26000 \quad \dots(ii)$$

Put value of (i) in (ii)

$$\Rightarrow 36000 + 9P_2 - 11P_2 = 26000$$

$$\Rightarrow P_2 = \text{Rs } 5000$$

Hence,  $P_1 = \text{Rs } 9000$

$$\text{Required \%} = \frac{9000}{5000} \times 100$$

$$= 180\%$$

S4. Ans.(d)

Sol.

ATQ—

$$\frac{22.5 \times 2 \times p}{100} - \frac{32.25(p + 4000)}{100} = 750$$

$$\Rightarrow p = \text{Rs } 16,000$$

$$\text{Required average} = \frac{16000 + 16000 + 4000}{2}$$

$$= \text{Rs } 18,000$$

S5. Ans.(a)

Sol.

Half yearly rate =  $15/2 = 7.5\%$

$$\text{Overall rate} = 7.5 + 7.5 + \frac{7.5 \times 7.5}{100} = 15.5625$$

$$\text{1st year interest} = 80000 \times \frac{15.5625}{100} = \text{Rs. } 12450$$

$$\text{2nd year interest} = (80000 + 12450) \times \frac{15}{100} = \text{Rs. } 13867.5$$

Total Interest =  $12450 + 13867.5$

$$= \text{Rs. } 26317.5$$

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S6. Ans. (a)

Sol.

Veer invested Rs.  $x$  in scheme A and Rs.  $(50000-x)$  in scheme B.

ATQ,

$$117 = \frac{(50000-x) \times 10 \times 3}{100 \times 2} - x \times \left[1 + \frac{5}{100}\right] \left[1 + \frac{5}{100}\right] \left[1 + \frac{5}{100}\right]$$

$$x = \text{Rs. } 24000$$

$$\text{Required interest} = \frac{26400 \times 10 \times 3}{100} = \text{Rs. } 7920$$

S7. Ans. (e)

Sol.

ATQ,

Sol.  $\Rightarrow$

$$= 35910 \times \left[1 + \frac{14\frac{2}{7}}{100}\right] \left[1 + \frac{22\frac{2}{9}}{200}\right] \left[1 + \frac{2}{3} \times \frac{6\frac{1}{4}}{100}\right] - 35910$$

$$= \text{Rs. } 16340$$

S8. Ans. (e)

Sol.

$$\text{Simple interest after 3 years} = \frac{6000 \times 100 \times 3}{6 \times 100} = \text{Rs. } 3000$$

Principal becomes  $6000 + 3000 = \text{Rs. } 9000$

$$\text{Simple interest for next 3 years (3 to 6 years)} = \frac{9000 \times 100 \times 3}{6 \times 100} = \text{Rs. } 4500$$

New principal becomes  $9000 + 4500 = \text{Rs. } 13500$

Rest of money  $15000 - 13500 = \text{Rs. } 1500$

$$1500 = \frac{13500 \times 1 \times t}{6}$$

$$t = \frac{2}{3} \text{ years}$$

Required time  $= 6\frac{2}{3} \text{ years.}$

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S9. Ans. (b)

Sol.

Let money borrowed by him was Rs.  $P$

ATQ,

$$\frac{P \times 4 \times 3}{100} + \frac{P \times 8 \times 2}{100} + \frac{P \times 9 \times 2}{100} = 19550$$

$$\Rightarrow P = \text{Rs. } 42,500$$

S10. Ans.(c)

Sol.

Let sum allotted to younger son = Rs x

∴ Part of elder son = Rs (18750-x)

ATQ,

$$x + \frac{x \times 6 \times 5}{100} = (18750 - x) + \frac{(18750 - x) \times 4 \times 5}{100}$$

$$\Rightarrow 130x = 18,75,000 - 100x + 3,75,000 - 20x$$

$$\Rightarrow x = \text{Rs } 9000$$

∴ Part of younger son = Rs 9000

Part of elder son = 18750-9000=Rs 9750

S11. Ans.(b)

Sol.

Let amount invested in each scheme be Rs. 100P

Interest received in 3<sup>rd</sup> year in scheme A

$$= 100P \left[ \left( 1 + \frac{16\frac{2}{3}}{100} \right)^3 - 1 \right] - 100P \left[ \left( 1 + \frac{16\frac{2}{3}}{100} \right)^2 - 1 \right]$$

$$= 100P \left[ \frac{343-216}{216} \right] - 100P \left[ \frac{49-36}{36} \right]$$

$$= 100P \times \frac{49}{216}$$

Interest received in 3<sup>rd</sup> year in scheme B

$$= \frac{100P \times 200 \times 1}{9 \times 100}$$

$$= \frac{200P}{9}$$

ATQ,

$$\frac{4900P}{216} - \frac{200P}{9} = 45$$

$$100P = \text{Rs. } 9720$$

required sum = Rs. 9720

S12. Ans.(b)

Sol.

$$r = \frac{10800 \times 100}{22500 \times 4} = 12\%$$

$$CI = 22500 \left( 1 + \frac{12}{100} \right)^2 - 22500$$

$$= 22500 \times \frac{112}{100} \times \frac{112}{100} - 22500$$

$$= 28224 - 22500 = 5724$$