

Simple interest & Compound Interest Questions & Solution

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Simple interest & Compound Interest Questions With Solution

1. Out of a sum of Rs 850, a part was lent at 6% SI and the other at 12% SI. If the interest on the first part after 2 years is equal to the interest on the second part after 4 years, then the second sum is
- A) Rs350
 - B) Rs280
 - C) Rs170
 - D) Rs220
 - E) None

View Answer

Option C

Solution:

Let the first part be x then second part be $850-x$.

$$(x \cdot 6 \cdot 2)/100 = [(850-x) \cdot 12 \cdot 4]/100$$

$$x = 850 \cdot 4 - 4x$$

$$5x = 850 \cdot 4$$

$$x = 680$$

Then second part $850-680 = \text{Rs } 170$.

2. A sum of Rs. 550 was taken as a loan. This is to be paid back in two equal installments. If the rate of interest be 20% compounded annually, then the value of each installment is :
- A) Rs360
 - B) Rs280
 - C) Rs250
 - D) Rs320
 - E) None

View Answer

Option A

Solution:

Let x = equal installment at the end of one year(rate% annually) .

Now 1st year,

$$P = 550,$$

$$\text{Interest} = (550 \cdot 20 \cdot 1)/100 = 110.$$

Now, at the beginning of 2nd year,

$$P = 550 + 110 - x$$

Interest at the end of 2nd year,

$$= [(660 - X) \cdot 20 \cdot 1]/100 = 132 - x/5.$$

Hence, total installment,

$$2x = 550 + 110 + 132 - x/5$$

$$2x + x/5 = 792$$

$$x = 360.$$

3. A certain sum of money amounts to Rs.1300 in 2 years and to Rs. 1525 in 3.5 years. Find the sum and the rate of interest.

- A) Rs850, 10%
- B) Rs900, 12%
- C) Rs800, 13%
- D) Rs1000, 15%
- E) None

View Answer

Option D

Solution:

$1525 - 1300 = 225$ for 1.5 yrs (3.5-2)

so for one yr $225/1.5 = 150$

then for 2 yrs interest is $150 + 150 = 300$

Then principal $1300 - 300 = 1000$.

Now $150/1000 * 100 = 15\%$

4. The simple interest on a certain sum of money for 3 years at 8% per annum is half the compound interest on Rs. 4000 for 2 years at 10% per annum. The sum placed on simple interest is:

- A) Rs1800
- B) Rs1750
- C) Rs2000
- D) Rs1655
- E) None

View Answer

Option B

Solution:

$CI = [4000 * (1 + 10/100)^2 - 4000] = 4000 * 11/10 * 11/10 - 4000$
 $= Rs840$.

Then Sum in SI 420 (ie $840/2$) = $(P * 3 * 8)/100$
 $= Rs1750$.

5. A Woman took a loan of Rs. 15,000 to purchase a mobile. She promised to make the payment after three years. The company charges CI at 20% per annum for the same. But, suddenly the company announces the rate of interest as 25% per annum for the last one year of the loan period. What extra amount she has to pay due to the announcement of new rate of interest?

- A) Rs1230
- B) Rs1135
- C) Rs1080
- D) Rs1100
- E) None

View Answer

Option C

Solution:

$15,000 * (1 + 20/100)^2 * [1 + 25/100 - (1 + 20/100)]$
 $15,000 * 120/100 * 120/100 [125/100 - 120/100]$
 $15000 * 144/100 (5/100)$
 $150 * 144 * 5/100 = 1080$

6. The ratio of the amount for two years under compound interest annually and for one year under simple interest is 6:5. When the rate of interest is same, then the value of rate of interest is:

- A) 20%
- B) 15%

- C) 18%
D) 22%
E) None

View Answer

Option A

Solution:

$$[P(1+r/100)^6]/[P(1+r*1/100)]=6/5$$

$$1+r/100=6/5$$

$$r/100=1/5$$

$$r=20\%$$

7. An automobile financier claims to be lending money at simple interest, but he includes the interest every six months for calculating the principal. If he is charging an interest of 10%, the effective rate of interest becomes:

- A) 9.5%
B) 8%
C) 10.25%
D) 10%
E) None

View Answer

Option C

Solution:

Let the sum be Rs. 100. Then,

$$\text{S.I. for first 6 months} = 100 \times 10 \times 1/100 \times 2 = \text{Rs}5$$

$$\text{S.I. for last 6 months} = 105 \times 10 \times 1/100 \times 2 = \text{Rs}5.25$$

$$\text{So, amount at the end of 1 year} = \text{Rs. } (100 + 5 + 5.25) = \text{Rs. } 110.25$$

$$\text{Effective rate} = (110.25 - 100) = 10.25\%$$

8. A person borrows Rs. 3000 for 2 years at 5% p.a. simple interest. He immediately lends it to another person at $6\frac{1}{4}\%$ p.a for 2 years. Find his gain in the transaction per year.

- A) Rs42
B) Rs39.25
C) Rs35
D) Rs37.5
E) None

View Answer

Option D

Solution:

$$\text{Gain in 2 yrs} = [(3000 \times 25/4 \times 2/100) - (3000 \times 2 \times 5/100)] = 375 - 300 = 75.$$

$$\text{Gain in 1yr} = 75/2 = 37.5$$

9. If the difference between CI and SI earned on a certain amount at 20% pa at the end of 3 years is Rs.640, find out the principal.

- A) Rs5500
B) Rs6500
C) Rs4500
D) Rs5000
E) None

View Answer

Option D**Solution:**

$$SI-CI \text{ for 3 yrs} = Pr^2/100^3 \cdot (300+r)$$

$$640 = P \cdot 20^2/100^3 \cdot 320$$

$$640 = (P \cdot 20 \cdot 20/100 \cdot 100 \cdot 100) \cdot 320$$

$$P = \text{Rs } 5000$$

10. If the simple interest on a certain sum of money is $4/25$ of the sum and the rate per cent equals the number years, then the rate of interest per annum is:

- A) 4%
- B) 5%
- C) 8%
- D) 10%
- E) None

View Answer**Option A****Solution:**

Let the principal be Rs x.

Then the SI $= 4/25x$

Rate of interest = Time

$$r = (100 \cdot 4/25x) / x \cdot r$$

$$r^2 = 400/25$$

$$r = 20/5 = 4\%$$

1. A sum of Rs. 10,000 is borrowed at 8% per annum compounded annually. If the amount is to be paid in three equal installments, the annual installment will be
- A) Rs 3520.25
 - B) Rs 3880.335
 - C) Rs 4200.15
 - D) Rs 4530.225
 - E) None

View Answer**Option B****Solution:**

Let each installment be x,

$$10000 = x/(1+8/100) + x/(1+8/100)^2 + x/(1+8/100)^3$$

$$10000 = x \{ 25/27 + (25/27)^2 + (25/27)^3 \}$$

$$= x \cdot 25/27 (1 + 25/27 + 625/729)$$

$$= 25x/27 (2029/729)$$

$$x = 3880.335$$

2. A sum was put at simple interest at a certain rate for 5 years. Had it been put at 2% higher rate, it would have fetched Rs. 450 more. Find the sum?

- A) Rs 4500
- B) Rs 3200

- C) Rs 3800
- D) Rs 4200
- E) None

View Answer

Option B

Solution:

$$P*(r+2)*5/100 - P*r*5/100 = 450$$

$$5P(r+2-r)/100 = 450$$

$$P = \text{Rs} 4500.$$

3. Stephen borrowed some money at 6% for the first 4 years, 8% for the next 6 years and 11% for the period beyond 2 years. If the total interest paid by him at the end of eleven years is Rs 5640, how much money did he borrow?

- A) Rs 10000
- B) Rs 6000
- C) Rs 8000
- D) Rs 9000
- E) None

View Answer

Option B

Solution:

Let the sum be P. Then,

$$(P*6*4/100) + (P*8*6/100) + (P*11*2/100) = 5640.$$

$$24P/100 + 48P/100 + 22P/100 = 5640.$$

$$94P/100 = 5640 \implies P = 6000.$$

4. A financier lend money at simple interest, but he includes the interest every six months for calculating the principal. If he is changing an interest of 10%, the effective rate of interest becomes?

- A) 10%
- B) 11.5%
- C) 10.25%
- D) 12%
- E) None

View Answer

Option C

Solution:

Let the sum be Rs. 100. Then,

$$\text{S.I. for first 6 months} = (100 * 10 * 1/2) / 100 = \text{Rs.} 5$$

Next 6 months 10% of 5 is Rs 2 is added.

$$\text{S.I. for last 6 months} = \text{Rs.} [(102 * 10 * 1/2) / 100] = \text{Rs.} 5.25$$

So, amount at the end of 1 year = Rs. $(100 + 5 + 5.25) = \text{Rs. } 110.25$

$$R = (110.25 - 100) = 10.25\%$$

5. Ragav purchases a coat for Rs.2400 cash or for Rs.1000 cash down payments and two monthly installments of Rs.800 each. Find the rate of interest.

- A) 80%
- B) 100%
- C) 110%
- D) 120%
- E) None

View Answer

Option D

Solution:

Amount as a principal for 2 month = $2400 - 1000 = 1400$

At the rate of $r\%$ per annum after 2 months, Rs.1400 will amount to Rs $1400 + (1400 * r * 2 / 100 * 12)$

Total amount for 2 installments at the end of second month $\text{Rs} 800 + (800 + (800 * r * 1 / 100 * 12))$

Then $1400 + 2800 * r / 1200 = 1600 + 800 * r / 1200$

$$R = 120\%$$

6. The difference between simple interest and compound interest on Rs. 1200 for one year at 10% per annum reckoned half-yearly is:

- A) Rs.3
- B) Rs.3.5
- C) Rs.4
- D) Rs.5
- E) None

View Answer

Option A

Solution:

$$SI = 1200 * 10 * 1 / 100 = 120$$

$$CI \text{ half yearly} = \{ 1200 * (1 + 5/100)^2 - 1200 \} = 123$$

$$\text{Difference} = 123 - 120 = 3$$

7. A borrows 5000 at simple interest. At the end of 3 years, he again borrows 3000 and finally pays 2340 as interest after 6 years from the time he made the first borrowing. Find the rate of interest per annum.

- A) 4%
- B) 5.5%
- C) 6%
- D) 4.5%
- E) None

View Answer**Option C****Solution:**

Let r be the rate of interest

$$5000 * 3x/100 + 8000 * 3x/100 = 2340$$

$$150x + 240x = 2340$$

$$X = 6$$

8. Arav fixes the rate of interest 5% per annum for first 3 years and for the next 4 years 6 percent per annum and for the period beyond 7 years, 7 percent per annum. If Mr. Kumar lent out Rs.2500 for 11 years, find the total interest earned by him?

- A) 1650
- B) 1565
- C) 1840
- D) 1675
- E) None

View Answer**Option D****Solution:**

$$5\% \text{ for 3 years} = 15\%$$

$$6\% \text{ for 4 years} = 24\%$$

$$7.5\% \text{ for 4 years} = 28\%$$

$$67\% \text{ of } 2500 = 1675$$

9. A certain sum of money amounts to rupees 2900 at 4% per annum in 4 years. In how many years will it amount to rupees 5000 at the same rate?

- A) 30
- B) 25
- C) 22
- D) 18
- E) None

View Answer**Option B****Solution:**

$$2900 = p + p * (4/100) * 4, p = 2500$$

$$5000 = 2500 + 2500 * (4/100) * t$$

$$5000 = 2500 + 100t$$

$$t = 25$$

10. Rs.100 doubled in 5 years when compounded annually. How many more years will it take to get another Rs.200 compound interest?

- A) 5
- B) 6
- C) 8
- D) 10
- E) None

View Answer

Option A

Solution:

Rs.100 invested in compound interest becomes Rs.200 in 5 years.

The amount will double again in another 5 years.

i.e., the amount will become Rs.400 in another 5 years.

So, to earn another Rs.200 interest, it will take another 5 years.

1. Mosses invested Rs. 20,000 in a scheme at simple interest @ 15% per annum. After three years he withdrew the principal amount plus interest and invested the entire amount in another scheme for two years, which earned him compound interest @ 12% per annum. What would be the total interest earned by Mosses at the end of 5 years?

- A) Rs. 16377.6
- B) Rs. 10152.3
- C) Rs. 11012.14
- D) Rs. 12500
- E) None

View Answer

Option A

Solution:

$$SI = 20,000 \times 15 \times 3 / 100 = 9000$$

$$\text{Amount} = 20,000 + 9000 = 29,000$$

$$\text{Now CI} = 29,000 \times (1 + 12/100)^2 = 29,000 \times 28/25 \times 28/25 = 36,377.6$$

$$A - P = 36,377.6 - 29,000 = 7377.6$$

$$\text{After 5 yrs } 7377.6 + 9000 = 16,377.6$$

2. A certain sum is invested for certain time. It amounts to Rs. 600 at 10% per annum. But when invested at 5% per annum, it amounts to Rs. 400. Find the time.

- A) 40 years
- B) 75 years
- C) 50 years
- D) 60 years
- E) None

View Answer**Option A****Solution:**

$$600 - P = P * 10 * t / 100 \rightarrow 1 \Rightarrow 6000 - 10P = Pt$$

$$400 - P = P * 5 * t / 100 \rightarrow 2 \Rightarrow 8000 - 20P = Pt$$

$$\text{Equate 1 and 2 } 6000 - 10P = 8000 - 20P \Rightarrow P = 200$$

$$\text{Substitute P in 1 then } 400 = 200 * 5 * t / 100 \Rightarrow 40 \text{ yrs.}$$

3. A lent Rs. 8000 to B for 2 years and Rs 6000 to C for 4 years on simple interest at the same rate of interest and received Rs 1840 in all from both of them as interest. The rate of interest per annum is

- A) 4.6%
- B) 8.4%
- C) 6.3%
- D) 10%
- E) None

View Answer**Option A****Solution:**

rate of interest be r%

Then

$$8000 * 2 * R / 100 + 6000 * 4 * R / 100 = 1840$$

$$160R + 240R = 1840$$

$$400R = 1840$$

$$R = 4.6 \% \text{ p.a}$$

4. A Man lends Rs. 1540 for five years and Rs. 1800 for four years. If he gets Rs. 1788 as interest on both amounts, what is the rate of interest ?

- A) 10%
- B) 12%
- C) 15%
- D) 8%
- E) None

View Answer**Option B****Solution:**

Let the interest rate be r%

We know that,

$$S.I = PTR/100$$

$$\Rightarrow (1540 \times 5 \times r)/100 + (1800 \times 4 \times r)/100 = 1788$$

$$\Rightarrow r = 178800/14900 = 12\%$$

5. If a sum of Rs.8000 lended for 20% per annum at compound interest then the sum of the amount will be Rs.13824 in

- A) 2 years
- B) 1 year
- C) 3 years
- D) 4 years
- E) None

View Answer

Option C

Solution:

P = Rs.8000, R = 20% per annum

$P(1 + R/100)^n$

Rs.13824 = 8000 * (1 + 20/100)ⁿ

$(12/10)^3 = (12/10)^n$

n=3

6. What will be the amount if sum of Rs.10,00,000 is invested at compound interest for 3 years with rate of interest 11%, 12% and 13% respectively?

- A) Rs.14,04,816
- B) Rs.12,14,816
- C) Rs.11,35,816
- D) Rs.16,00,816
- E) None

View Answer

Option A

Solution:

Here P=10,00,000 R1=11 R2=12 R3=13

Amount after 3 yrs = $p(1+R1/100)(1+R2/100)(1+R3/100)$

$10,00,000*(1+11/100)(1+12/100)(1+13/100)=14,04,816.$

7. Two persons P and Q borrowed Rs.40,000/- and Rs.60,000/- respectively from R at different rates of simple interest. The interest payable by P at the end of the first four years and that payable by Q at the end of the first three years is the same. If the total interest payable by P and Q for one year is Rs.8,400/- then at what rate did Q borrow the money from R?

- A) 8
- B) 10
- C) 12
- D) 9
- E) None

View Answer

Option B

Solution:

$40000*4*R1/100=60000*3*R2/100$

$$R1 = 9/8R2$$

$$1\text{yr interest } 40000 * 1 * r1/100 + 60000 * 1 * R2/100 = 8400$$

$$4R2 + 6R2 = 84$$

$$\text{Then substitute } 4(9/8R2) + 6R2 = 84 \implies R2 = 8$$

8. In what time will Rs 390625 amount to Rs 456976 at 4% compound interest?

- A) 4
- B) 5
- C) 8
- D) 6
- E) None

View Answer

Option A

Solution:

$$P(1+r/100)^t = A$$

$$390625(1+4/100)^t = 456976$$

$$(1+1/25)^t = 456956 / 390625$$

$$(26/25)^t = (26/25)^4$$

$$T = 4$$

9. The difference between C.I. and S.I. on a certain sum of money at 10% per annum for 3 years is Rs. 620. Find the principal if it is known that the interest is compounded annually.

- A) Rs. 2,00,000
- B) Rs. 20,000
- C) Rs. 10,000
- D) Rs. 1,00,000
- E) None

View Answer

Option B

Solution:

$$\text{diff between CI and SI} = P * r^2/100^2 * (300+r)$$

$$620 = P * 100/100^2 * 310$$

$$P = \text{Rs} 20,000$$

10. Shanthi borrowed Rs.75,000.00 from two banks at compound interest compound annually. One bank charges interest at the rate of 15% per year and the other bank at 20% per year. If at the end of the year, shanthi paid Rs.12,000.00 as the total interest to the two banks, how much did she borrow from the second bank?

- A) 18000
- B) 20000
- C) 15000
- D) 19000
- E) None

View Answer**Option C****Solution:**

$$P*(1+r/100)=A$$

$$75000*(100+r)/100=(75000+12000)87000$$

$$100+r=116 \implies r=16\%$$

$$15 \dots \dots \dots 20$$

$$\dots \dots \dots 16$$

Ratio 4:1

Total 5 == 75000

1 ? == Rs15000.

1. Reena is borrowed a sum of RS. 6000 from Raveena at the rate of 14% for 2 years. She then added some more money to the borrowed sum and lent it to Sameera at the rate of 18% of simple interest for the same time. If Reena gained Rs. 650 in the whole transaction, then what sum did he lend to Sameera?
- A) Rs.6427.12
 B) Rs.8015.41
 C) Rs.6472.22
 D) Rs.7541.2
 E) Rs.6758.2

View Answer**Option C****Solution:**

Let the money lent to Sameera be Rs.x

Therefore ,

$$x*(18/100)*2 - 6000*(14/100)*2 = 650$$

$$\implies x = 6472.22$$

2. The rate of interest on a sum of money is 4% per annum for the first 2 years, 6% per annum for the period next 4 years, 8% per annum for the period beyond 6 years. If the simple interest accrued by the sum for a total period of 9 years is Rs. 1680, what is the sum?
- A) Rs.3000
 B) Rs.5000
 C) Rs.4700
 D) Rs.5500
 E) Rs.7580

View Answer**Option A****Solution:**

SI at the rate of 4% for 2 years ,

$$= (P * 4 * 2) / 100 = 8P / 100$$

SI at the rate of 6% for 4 years ,

$$(P \times 6 \times 4)/100 = 24P/100$$

SI for the next 3 years

$$SI = (P \times 8 \times 3)/100 = 24P/100$$

$$\text{Total SI} = 8P/100 + 24P/100 + 24P/100$$

$$\Rightarrow P = (1680 \times 100)/56 = 3000$$

3. The simple interest on a certain sum for 2 years at the rate of 5% per annum is Rs.160. What would be the difference of compound interest and simple interest for the same period and at the same rate of interest?

- A) Rs.2
- B) Rs.10
- C) Rs.6
- D) Rs.4
- E) Rs.8

View Answer

Option D

Solution:

For 2 years

$$SI = 5 \times 2 = 10 \% \text{ of the sum}$$

$$CI = 5 + 5 + (5 \times 5)/100 = 10.25 \% \text{ of the sum}$$

$$\text{required diff.} = 10.25 - 10 = 0.25 \% \text{ of the sum}$$

Therefore ,

$$\text{the required diff.} = (160/10) \times 0.25 = \text{Rs.4}$$

4. What is the difference between CI and SI ,if sum is Rs.10,000 for 3 years at the rate of 3%?

- A) Rs.42
- B) Rs.30
- C) Rs.27.27
- D) Rs.35
- E) Rs.25

View Answer

Option C

Solution:

$$\text{Difference} = [\text{sum} \times r^2 (300 + r)]/(100)^3$$

$$= [10000 \times 3 \times 3 (300+3)]/(100)^3 = 27.27$$

5. Arjun lent out a sum of money at compound interest rate of 30% per annum for 2 years .It would fetch Rs. 500 more if interest is compounded half –yearly.

- A) Rs.8000
- B) Rs.8041.12
- C) Rs.8145

- D) Rs.8457.2
E) Rs.8333.33

View Answer

Option E

Solution:

$$P[1+(15/100)]^4 - P[1+(30/100)]^2 = 500$$
$$\Rightarrow P = 8333.33$$

6. At what rate of % per annum will Rs.2304 amount to Rs. 2500 in 2 years compounded annually.
- A) 5.2%
B) 4.16%
C) 3.45%
D) 4.5%
E) 3.2%

View Answer

Option B

Solution:

Shortcut::

$$2304 == 2500$$

$$576 == 625$$

Take square roots

$$24 == 25$$

$$\text{diff.} = 1$$

$$= (1/24) * 100 = 4.16\%$$

7. The ratio of the amount for 2 years under compound interest annually and for 1 year under simple interest is 5:4 when the rate of interest is same then find the rate of interest?
- A) 20%
B) 25%
C) 60%
D) 30%
E) 40%

View Answer

Option B

Solution:

$$\text{rate} / 100 = 5/4 - 1$$

$$\text{rate} = 25\%$$

8. Anu borrowed Rs.800 at rate of interest 10% . He repaid Rs.400 at the end of first year.What is the amount required to repay at the end of second year to discharge his loan which was calculated at compound interest?

- A) Rs.650
- B) Rs.528
- C) Rs.490
- D) Rs.780
- E) Rs.472

View Answer

Option B

Solution:

Amount paid at the end of 1 year = $800[1 + 10/100] = 880$

Amount left as principal for the second year = $880 - 400 = 480$

Amount to be paid after 2nd year = $480 [1 + 10/100] = \text{Rs.}528$

9. Sahil has lent some money to Anita at 6% per annum and Sheetal at 8% per annum. At the end of the year he has gain the overall interest at 7% per annum.In what ratio has he lent the money to Anita and Sheetal?

- A) 3:8
- B) 1:2
- C) 2:5
- D) 1:1
- E) 4:5

View Answer

Option D

Solution:

6.....8

.....7

1 : 1

10. What is the ratio of the simple interest earned by certain amount for 4 years and 8 years at the same rate of interest?

- A) 3:2
- B) 2:1
- C) 1:2
- D) 4:3
- E) 3:5

View Answer**Option C****Solution:**

$$\text{ratio} = 4PR / 8PR = 1 : 2$$

1. A man with a sum of Rs3903 wants to deposit in the bank account of his two sons so that both will get equal money after 5yrs and 7yrs respectively at the rate of 4% compounded annually. Find the part of amount deposited into the account of first son?
- A) 2028
B) 2400
C) 3000
D) 1250

View Answer**Option A****Some Extra:**

$$A(1 + 4/100)^5 = B(1 + 4/100)^7$$

$$A/B = (1 + 4/100)^2 = 676/625$$

$$676A = 625B$$

$$1 = 3$$

$$676 = 2028$$

2. The ratio of difference between compounded interest and simple interest for 3years to the difference between C.I and S.I for 2years is 31 : 10. What is rate of percent per annum ?
- A) 20%
B) 25%
C) $16\frac{2}{3}\%$
D) 10%

View Answer**Option D****Some Extra:**

Principal

A A A

. B B

. B

. C

Difference between C.I & S.I for 3yrs = $3B + C$ Difference between C.I & S.I for 2yrs = B

$$\text{Now } \dots (3B + C)/B = 31/10$$

$$B = 10$$

$$C = 1$$

$$\text{Rate} = C/B = 1/10 = 10\%$$

3. A certain sum is lent for 3yrs at 10% compound interest p.a. if the C.I for the 3rd year is 242. Then what will be the S.I for 4yrs?
- A) 400

- B) 800
C) 600
D) 1000

View Answer

Option B

Some Extra:

$R - 10\% = 1/10 \dots (10)^3 = 1000$, let $P=1000$

1000	
100.....100.....100	
10.....10	
10	
1	

C.I for 3rd yr = 121

$121 = 242$

$1 = 2$

$P = 1000 = 2000$

$S.I = 4 \times 10 = 40\%$ of 2000 = rs800

4. What will be the difference between compound interest on sum of 3000 for $1(1/2)$ yrs. When the interest is compounded annually and half yearly respectively if rate is 20% compounded annually?
- A) 30
B) 33
C) 36
D) 39

View Answer

Option B

Some Extra:

Compound AnnuallyC.I = 960

Compound half yearly C.I = 993

Difference = $993 - 960 = 33$

5. If a principal becomes triple in 4yrs at C.I then find in how many years it will be nine fold?
- A) 8yrs
B) 12yrs
C) 10yrs
D) 16yrs

View Answer

Option A

Some Extra:

In C.I 'P' increases like.....

$P \dots 3P \dots 9P$

$\dots 4 \dots 4$

$4+4 = 8\text{yrs}$

6. If the difference between C.I and S.I at 20% rate of interest 'is 480. Then find the principal amount?
- A) 3600
B) 3750
C) 4000
D) 4750

View Answer

Option B

Some Extra:

$$20\% = 1/5 \dots \dots (5)^r \dots \dots = (5)^3 = 125 = \text{principal}$$

In 3yrs difference will always come

$$3A + 1 = (3 \times 5) + 1 = 16$$

$$16 = 480$$

$$1 = 30$$

$$125 = 3750$$

7. A sum of Rs13,360 was borrowed at $8\frac{3}{4}\%$ p.a C.I and paid back in 2yrs in two equal installments. What was the amount of each installment?
- A) 5769
B) 7569
C) 7009
D) 7500

View Answer

Option B

Some Extra:

$$8\frac{3}{4}\% = 7/80$$

$$80/87 \times 167/87 \times \text{installments} = 13360$$

$$\text{Installments} = \text{Rs}7569$$

8. If a sum of Rs16 becomes Rs81 in 4yrs then find the rate of interest at compound interest?
- A) $33\frac{1}{3}\%$
B) 40%
C) 50%
D) $66\frac{2}{3}\%$

View Answer

Option C

Some Extra:

$$4\sqrt{16} : 4\sqrt{81}$$

$$2 : 3$$

$$3 - 2 = 1$$

$$1/2 \times 100 = 50\%$$

9. Find the C.I on Rs20,000 at 15% rate of interest in 3yrs?

- A) 10400.5
- B) 10500.5
- C) 10517.5
- D) 10417.5

View Answer

Option D

Some Extra:

$$\begin{array}{r}
 . \quad 20000 \\
 \text{SI for 1 year} = 20000 \times 15/100 = \text{Rs } 3000 \\
 3000 \dots\dots\dots 3000 \dots\dots\dots 3000 \\
 . \quad \quad \quad 450 \dots\dots\dots 450 \\
 . \quad \quad \quad \quad \quad 450 \\
 . \quad \quad \quad \quad \quad 67.5 \\
 = 9000 + 1350 + 67.5 = 10417.5
 \end{array}$$

10. S.I on a sum for 3yrs at any rate of interest is 450 while C.I on the same sum at the same rate for 2yrs is 315. Find the sum and rate percent?

- A) 5% , 1500
- B) 10% , 1500
- C) 5%,2000
- D) 10%,2000

View Answer

Option B

Some Extra:

$$\begin{array}{r}
 . \quad \quad \quad P \\
 \text{1st yr} 150 \dots\dots\dots \text{2nd yr} 150 \\
 \dots\dots\dots 15 \\
 15 = 10\% \text{ of } 150 \\
 \text{So } R = 10\% \\
 P = 1500
 \end{array}$$

1. Find the compound interest on Rs36,000 at a rate in which Rs216 becomes Rs343 in 3years and the time is 2years?

- A) Rs12000
- B) Rs12500
- C) Rs13000
- D) Rs13500
- E) Rs14200

View Answer

Option C

Solution:

first we find the rate

$$3\sqrt{216} : 3\sqrt{343}$$

$$6 : 7$$

$$(+1)$$

$$1/6 * 100 = 16(2/3) \%$$

$$\text{Now } R = 16(2/3) \% = 1/6$$

$$6 \dots\dots\dots 7$$

$$6 \dots\dots\dots 7$$

$$36 \text{ } 49$$

$$(13) = 13000$$

2. If a principal becomes triple in 3years on C.I. then find in how many years it will be 27 fold?
- A) 39years
B) 9years
C) 18years
D) 27years
E) 10years

View Answer

Option B

Solution:

in C.I principal increase like

$$1 \dots 3 \dots 9 \dots 27$$

$$\dots 3 \dots 3 \dots 3$$

$$= 9\text{years}$$

3. If a principal becomes amount of rs14500 at $14(2/7)\%$ rate of interest in 3years at simple interest. Find the S.I on principal?
- A) Rs4250
B) Rs4300
C) Rs4400
D) Rs4350
E) Rs4270

View Answer

Option D

Solution:

$$R = 14(2/7)\% = 1/7$$

S.I remains same in all years so...

$$(P)7 + 1+1+1 = 10(A)$$

$$10-7 = 3S.I$$

$$10 = 14500$$

$$1 = 1450$$

$$3 = 4350$$

4. If the difference between C.I and S.I is rs256 at 20% rate of interest in 3years. Find the amount on C.I?
- A) Rs4320

- B) Rs2500
C) Rs3456
D) Rs3200
E) Rs3478

View Answer

Option C

Solution:

$$S.I \text{ in 3years} = 20 \times 3 = 60\%$$

$$C.I \text{ in 3years} = 5\% \dots\dots\dots 6$$

$$\cdot \quad \quad \quad 5\% \dots\dots\dots 6$$

$$\cdot \quad \quad \quad 5\% \dots\dots\dots 6$$

$$\cdot \quad \quad \quad 125 \quad \quad 216$$

$$\cdot \quad \quad \quad (91)$$

$$91/125 \times 100 = 72.8$$

$$\text{Difference} = 72.8 - 60 = 12.8$$

$$12.8\% = 256$$

$$100\% = 2000$$

$$\text{Now } P = 2000$$

$$\text{Means in C.I } \dots\dots 125 = 2000$$

$$1 = 16$$

$$216 = 3456$$

5. A sum becomes 8000 in 3years and 10000 in 6years at C.I. Find the sum ?
A) Rs6400
B) Rs6500
C) Rs6000
D) Rs7000
E) Rs7200

View Answer

Option A

Solution:

$$x : y = y : z$$

$$x : 8000 = 8000 : 10000$$

$$x = 6400$$

6. Find the C.I on rs9000 at 15% rate of interest for 3years?
A) Rs4645.87
B) Rs4680.87
C) Rs4685.87
D) Rs4687.87
E) Rs4356.77

View Answer

Option D**Solution:**

$$15\% \text{ of } 9000 = 1350$$

$$1350 \dots\dots\dots 1350 \dots\dots\dots 1350$$

$$\cdot \quad \quad \quad 202.5 \dots\dots\dots 202.5$$

$$\cdot \quad \quad \quad \quad \quad \quad 202.5$$

$$\cdot \quad \quad \quad \quad \quad \quad 30.37$$

$$= 4687.87$$

7. Find the compound interest on 18000 at 20% rate of interest in $1\frac{1}{2}$ years, if compounded half yearly ?

A) Rs5958

B) Rs4916

C) Rs5780

D) Rs3500

E) Rs6724

View Answer**Option A****Solution:**

in half yearly we make rate half and time double.

$$\text{So } R = 20/2 = 10\%$$

$$T = 3/2 * 2 = 3 \text{ years}$$

$$\text{So } 10\% \text{ of } 18000 = 1800$$

$$1800 \dots\dots\dots 1800 \dots\dots\dots 1800$$

$$\cdot \quad \quad \quad 180 \dots\dots\dots 180$$

$$\cdot \quad \quad \quad \quad \quad \quad 180$$

$$\cdot \quad \quad \quad \quad \quad \quad 18$$

$$= 5400 + 540 + 18 = 5958$$

8. Find the difference between S.I and C.I on Rs 5000 if rate of interest for first year is 10% and 2nd year is 15% and 3rd year is 20% ?

A) Rs300

B) Rs320

C) Rs330

D) Rs340

E) Rs360

View Answer**Option D****Solution:**

$$S.I = 10+15+20 = 45\%$$

$$C.I \dots\dots\dots 10 \dots\dots\dots 11$$

$$\cdot \quad \quad \quad 20 \dots\dots\dots 23$$

$$\cdot \quad \quad \quad \quad \quad \quad 5 \dots\dots\dots 6$$

$$\cdot \quad \quad \quad 1000 \dots\dots\dots 1518$$

$$\cdot \quad \quad \quad \quad \quad \quad (518)$$

$$= 518/1000 * 100 = 51.8 \%$$

$$\begin{aligned} &= \text{difference} = 51.8 - 45 = 6.8\% \\ &= 6.8\% \text{ of } 5000 = 340 \end{aligned}$$

9. If the principal become 6 fold on S.I in 10 years then find in how many years it will be 12 fold?

- A) 24years
- B) 22years
- C) 12years
- D) 20years
- E) 25years

View Answer

Option B

Solution:

$$P \dots\dots\dots 6P$$

$$6P - P = 5P \text{ interest}$$

$$5P = 10\text{years}$$

$$P = 2\text{years}$$

$$11 P = 22\text{years}$$

10. If the compound interest on a sum at 25% rate of interest is Rs900 then find the S.I of 3years at same rate?

- A) Rs1000
- B) Rs1100
- C) Rs1300
- D) Rs1200
- E) Rs1500

View Answer

Option D

Solution:

$$S.I = 25 \times 3 = 75\%$$

$$C.I = 25\% = 1/4$$

$$4 \dots\dots\dots 5$$

$$4 \dots\dots\dots 5$$

$$16 \dots\dots\dots 25$$

$$25 - 16 = 9$$

$$9 = 900$$

$$16 = 1600 = \text{principal}$$

$$\text{So } 75\% \text{ of } 1600 = 1200$$

1. If the difference between Simple Interest and Compound Interest at 10% p.a rate of interest for 3 years is Rs. 930, then find the Sum.

- A) Rs 25,000
- B) Rs 30,000
- C) Rs 35,000
- D) Rs 40,000

E) None of these

View Answer

Option B

Solution:

On SI, Rate for 3 years = $3 \times 10 = 30\%$

On CI rate for 3 years – $10\% = 1/10$

10 — 11

10 — 11

10 — 11

1000 — 1331

$= 1331 - 1000 / 1000 \times 100 = 33.1\%$

Difference = $33.1 - 30 = 3.1\%$

$3.1\% = 930$

$100\% = \text{Rs } 30,000$

2. On a certain rate of interest a sum of Rs 5000 becomes Rs 16,200 in certain years at compound interest. In half of the time given, this sum will become?

A) Rs 10,000

B) Rs 5,600

C) Rs 9,000

D) Cannot be determined

E) None of these

View Answer

Option C

Solution:

$$\begin{array}{ccccc} a & \text{---} & b & \text{---} & c \\ 5000 & \text{---} & X & \text{---} & 16200 \\ & \text{---} t & & \text{---} t & \end{array}$$

As we have to calculate the sum for half time, both time period is same, and hence

$a:b = b:c$

$5000:x = x:16200$

$x = \text{Rs } 9000$

3. If a certain sum becomes double in 3 years at certain rate of interest at C.I. Then in how many years it will become 16 times?

A) 12 years

B) 24 years

C) 8 years

D) Cannot be determined

E) None of the above

View Answer

Option A

Solution:

In C.I P increases like

P — 2P — 4P — 8P — 16P

— 3yrs — 3yrs — 3yrs — 3yrs

total = 3+3+3+3 = 12 years

4. Ram invests two sum of money A and B at 10% p.a. and 20% p.a respectively at CI for 2 years. IF the total interest on both the sum is Rs 5350 then find the sum invested in A if the total sum of A and B was Rs 20,000?

- A) Rs 5,000
B) Rs 10,000
C) Rs 12,000
D) Rs 15,000
E) None of these

View Answer

Option D

Solution:

At 10% CI in 2 years = 21 %

At 20% Ci in 2 years = 44%

and 5350 is 107/4% of 20000, by using allegation

A	B
21	44
107/4	
3	1

A = $\frac{3}{4} \times 20000 = \text{Rs } 15000$

5. The compound interest on a certain sum for 2 years at a certain rate of interest is Rs 1025 and Simple Interest on the same sum, same time and same rate of interest is Rs 1,000. Then find the C.I for same sum in 3 years.

- A) Rs 1575.25
B) Rs 1576.25
C) Rs 1576.75
D) Rs 1575.75
E) None of these

View Answer

Option B

Solution:

SI for 2 years = Rs 1000 \Rightarrow Si 1 year = Rs 500

In the second years Rs 25 is added in CI (1025-1000) which is 5% of 500

Hence R = 5%

5% = 500

100% = 10000

sum = 10000

CI for 3 years = RS 1576.25

6. A sum becomes triple in 6 years at S.I. The same sum will become 19 times in how many years?

- A) 50 years
- B) 48 years
- C) 54 years
- D) 57 years
- E) None of these

View Answer**Option C****Solution:**

SI=A-P=> A=3P as sum triples

SI=3P-P=2P in 6 years

In 19 times SI=18 P—54 years (2:6 hence 18=54)

7. A sum of Rs 343 becomes 512 in 3 years at C.I. Find the rate of interest.
- A) 14 (2/7) %
 - B) 12.5 %
 - C) 8 (2/3) %
 - D) 16 (2/3) %
 - E) None of these

View Answer**Option A****Solution:**

Sum=353; Amount=512

as many year, put that many root i.e

cuberoor(343): cuberoor(512)

7:8

rate=(8-7)/7 *100 =14 (2/7)%

8. Find the C.I on Rs 20,000 at 10% rate of interest in 2 years if compounded half yearly.
(Approximately)
- A) Rs 4210
 - B) Rs 4310
 - C) Rs 4410
 - D) Rs 4510
 - E) None of these

View Answer**Option B****Solution:**

In half yearly=> Time-double; Rate= half

Rate=5% ; Time=4 years; Sum = Rs 20,000

1 years	2 years	3 years	4 years
1000	1000	1000	1000
50	50	50	50
50	50	50	50

_____	-2.5	_____	-50
_____		_____	-2.5
_____		_____	-2.5
_____		_____	-2.5
_____		_____	-0.125

Total = Rs 4000 + 300 + 10 + 0.125 = Rs 4310.125

9. A sum of Rs 6,000 was taken as a loan. This is to be repaid in two equal annual installments. If the rate of interest is 20% compounded annually then find the value of each installment.

- A) Rs 4400
- B) Rs 2220
- C) Rs 4320
- D) Rs 4420
- E) None of these

View Answer

Option C

Solution:

Formula = $x / (1 + R/100)^T$

$x / (1 + 20/100)^1 + x / (1 + 20/100)^2 = 6600$

solve and get $x = 4320$

10. If the ratio of difference between CI and SI for 3 years and 2 years is 31:10, then find the Rate of Interest.

- A) 11.11%
- B) 10%
- C) 20%
- D) 25%
- E) None of these

View Answer

Option B

Solution:

Sum = A

Interest = B

A — A — A

— B — B

— B

— C

CI for 3 years = $3A + 3B + C$

SI for 3 years = $3A$

Diff = $3B + C$ CI for 2 years = $2A + B$

SI for 2 years = $2A$

diff = B

ratio = $(3B + C) / B = 31/10$

$B = 10$; $C = 1$

Rate = $C/B = 1/10 = 10\%$

1. If a sum amounts to Rs 6000 in 2 years on CI. What will it become after 4 years on C.I, if the principal amount was Rs 4500?
- A) Rs 7500
 - B) Rs 8000
 - C) Rs 8500
 - D) Rs 9000
 - E) None of these

View Answer

Option B

Solution:

a————b————c
· 2 years——2 years
a:b = b:c
 $4500:6000 = 6000:x$
 $x = 8000$

2. If Compound Interest on certain sum for 2 years is 352 at some rate of interest and Simple Interest on same rate for 3 years is 480, then find the sum.
- A) Rs 800
 - B) Rs 1000
 - C) Rs 700
 - D) Rs 900
 - E) None of these

View Answer

Option A

Solution:

SI for 1 years= $480/3 = 160$ (as SI is same for every year)
SI for 2 years=320
CI for w year=352; diff=32
 $32=20\%$ of 160
hence $r=20\%$
 $20\%=160$
 $100\%=800$

3. If a sum of RS 2744000 becomes Rs 3176523 in three years on Compound Interest then find the rate of interest.
- A) 10%
 - B) 5%
 - C) 8%
 - D) 20%
 - E) None of these

View Answer**Option B****Solution:**Find the cube root of both numbers. Cube root \rightarrow 3 years

cube root(2744000): cube root(3176523)

140:147

rate = $(147-140)/140 \times 100 = 5$

4. If the difference between Simple Interest and Compound Interest at 20% rate of Interest in 3 years is 5120, then find the sum.

A) Rs 40,000

B) Rs 50,000

C) Rs 60,000

D) Rs 30,000

E) None of these

View Answer**Option A****Solution:**On SI interest = $20\% \times 3 = 60\%$ On CI interest = $20\% = 1/5$

5 ——— 6

5 ——— 6

5 ——— 6

125 ——— 216

 $(216-125)/125 \times 100 = 72.8\%$ diff = $72.8 - 60 = 12.8\%$ $12.8\% = 5120$ $100\% = 40,000$

5. Find the Compound Interest on Rs 30,000, if the rate of interest for first year is 5% second year is 10% and on the third year is 20%

A) 11580

B) 11500

C) 10500

D) 10000

E) None of these

View Answer**Option A****Solution:**1st year $5\% = 1/20$ ——— 20 ——— 21

$$\begin{array}{r}
 2^{\text{nd}} \text{ year } 10\% = 1/10 \text{ ————— } 10 \text{ ————— } 11 \\
 3^{\text{rd}} \text{ year } 20\% = 1/5 \text{ ————— } 5 \text{ ————— } 6 \\
 \text{—————} = 1000 \text{ ————— } 1386 \\
 (1386 - 1000)/1000 * 200 = 38.6\% \\
 38.6\% \text{ of } 30000 = 11580
 \end{array}$$

6. What is the difference between Simple Interest and Compound Interest on Rs 70,000 at 20% rate of interest in one and a half year if Compound Interest is compounded half yearly.

- A) Rs 2070
- B) Rs 2160
- C) Rs 2170
- D) Rs 2060
- E) None of these

View Answer

Option C

Solution:

SI on 1 (1/2) year = $20 * 1.5 = 30\%$

SI on 1 (1/2) years of compounded half yearly make rate half yearly and time double

$r = 10\% = 1/10$; $t = 3$ years

10 ——— 11

10 ——— 11

10 ——— 11

1000 ——— 1331

$r = 331/1000 * 100 = 33.1$

33.1% of 70,000 = 23170

7. Divide Rs 20,816 between A and B so that A's share at the end of 7 years is equal to B's share at the end of 9 years with compound interest being 4% p.a

- A) 10716, 10100
- B) 10616, 10200
- C) 10816, 10000
- D) 10800, 10016
- E) None of these

View Answer

Option C

Solution:

second part + $(4 + 4 + 16/100)$ of second part = first part

second part + 8.16% of second part = first part

first part/second part = $108.16/100 = 10816/10000$

8. Find the simple interest and compound interest of Rs 15000 at 20% rate of interest after 3 years.

- A) 9000, 11000
- B) 8000, 11920
- C) 9000, 10920
- D) 6000, 9000

E) None of these

View Answer

Option C

Solution:

$$SI = 20 \times 3 = 60\% = 9000$$

CI =

$$3000 \quad \text{—————} \quad 3000 \quad \text{—————} \quad 3000$$

$$\text{—————} \quad 600 \quad \text{—————} \quad 600$$

$$\text{—————} \quad 600$$

$$\text{—————} \quad 120$$

$$\Rightarrow 9000 + 1800 + 120 = 10920$$

9. A man borrows Rs 8000 at 10% compounded rate of interest. At the end of each year he pays back Rs 2200. How much amount should he pay at the end of the third year to clear all his dues?

A) Rs 5500

B) Rs 5466

C) Rs 5666

D) Rs 5566

E) None of these

View Answer

Option D

Solution:

$$\text{first year} = 8000 + 800 = 8800 - 2200 = 6600$$

$$\text{second year} = 6600 + 660 = 7260 - 2200 = 5060$$

$$\text{third year} = 5060 + 506 = 5566$$

10. What sum of money at compound interest will amount to Rs 32000 in 3 years at the rate of interest 20% in first years, $16 \frac{2}{3}\%$ in second year and $14 \frac{2}{7}\%$ in third year.

A) Rs 18,000

B) Rs 20,000

C) Rs 22,000

D) Rs 25,000

E) None of these

View Answer

Option B

Solution:

$$1^{\text{st}} \text{ year} = 20\% = \frac{1}{5} \quad \text{—————} \quad 5 \quad \text{—————} \quad 6$$

$$2^{\text{nd}} \text{ year} = 16 \frac{2}{3}\% = \frac{1}{6} \quad \text{————} \quad 6 \quad \text{————} \quad 7$$

$$3^{\text{rd}} \text{ year} = 14 \frac{2}{7}\% = \frac{1}{7} \quad \text{————} \quad 7 \quad \text{————} \quad 8$$

$$\text{—————} = 210 \quad \text{————} \quad 336 \text{ on simplifying} = 5:8$$

$$r = \frac{(8-5)}{5} \times 100 = 60\%$$

$$160\% = 32000$$

$$100\% = 20000$$

•

The compound interest on a certain sum for 2 years is Rs. 786 and S.I. is Rs. 750. If the sum is invested such that the S.I. is Rs. 1296 and the number of years is equal to the rate per cent per annum, Find the rate of interest?

- A.4%
- B.5%
- C.6%
- D.8%
- E.2%

Answer & Explanation

Answer – C.6%

Explanation :

CI for 2 years = Rs. 786

SI for 2 years = Rs. 750

$36/360 * 100 = 10\%$

P for first year = 3600

$P * x * x / 100 = 1296$

$x = 6\%$

• Hari took an educational loan from a nationalized bank for his 2 years course of MBA. He took the loan of Rs.5 lakh such that he would be charged at 7% p.a. at CI during his course and at 9% CI after the completion of the course. He returned half of the amount which he had to be paid on the completion of his studies and remaining after 2 years. What is the total amount returned by Hari?

- A.Rs. 626255
- B.Rs. 626277
- C.Rs. 616266
- D.Rs. 626288
- E.None of these

Answer & Explanation

Answer – D.Rs. 626288

Explanation :

$5,00,000 * (1.07)^2 = 572450$

Returned amount = 286225

After two years = $286225 * (1.09)^2 = 340063$

Total amount = $286225 + 340063 = 626288$

• Rs.20,000 was invested by Mahesh in a FD @ 10% pa at CI. However every year he has to pay 20% tax on the CI. How much money does Mahesh have after 3 years?

- A. 25694
- B. 25594
- C. 25394
- D. 25194
- E.None of these

Answer & Explanation

Answer – D. 25194

Explanation :

$(20000 * (1.08)^3) = 25194$

• Leela takes a loan of Rs. 8400 at 10% p.a. compounded annually which is to be repaid in two equal annual installments. One at the end of one year and the other at the end of the second year. The value of each installment is?

- A. 4200

- B. 4140
C. 4840
D. 5640
E. None of these

Answer & Explanation

Answer – C. 4840

Explanation :

$$8400 = x * (210/121) \Rightarrow 4840$$

- A sum of money lent at compound interest for 2 years at 20% per annum would fetch Rs.723 more, if the interest was payable half yearly than if it was payable annually. The sum is ____

- A.Rs. 20000
B.Rs. 15000
C.Rs. 30000
D.Rs. 45000
E.None of these

Answer & Explanation

Answer – C.Rs. 30000

Explanation :

sum – Rs.x

$$\text{C.I. compounded half yearly} = (4641/10000)x$$

$$\text{C.I. compounded annually} = (11/25)x$$

$$(4641/10000)x - (11/25)x = 723$$

$$x = 30000$$

- A sum of Rs.7140 is to be divided between Anita and Bala who are respectively 18 and 19 yr old, in such a way that if their shares will be invested at 4% per annum at compound interest, they will receive equal amounts on attaining the age of 21 year. The present share of Anita is

- A. 4225
B. 4352
C. 3500
D. 4000
E. None of these

Answer & Explanation

Answer – C. 3500

Explanation :

Amount got by Anita after 3 yr = Amount got by Bala after 2 yr

$$x * (26/25)^3 = (7140 - x) * (26/25)^2$$

$$26/25 = 7140 - x / x$$

$$x = 3500$$

- Suresh borrows Rs.6375 to be paid back with compound interest at the rate of 4 % pa by the end of 2 year in two equal yearly installments. How much will each installment will be?

- A.3840
B.3380
C.4800
D.Data inadequate
E.None of these

Answer & Explanation

Answer – B.3380

Explanation :

$$25x/26 + 625/676x = 6375$$

$$x = (6375 * 676)/1275 = 3380$$

- A sum of Rs. 8400 was taken as loan. This is to be paid in two equal annual installments. If the rate of interest be 20% compounded annually, then the value of each installment is

A. 5400
B. 5700
C. 5100
D. 5200
E. None of these

Answer & Explanation

Answer – A. 5400

Explanation :

Let value of each installment be X.

$$X/(1 + 20/100) + X/(1 + 20/100)^2 = 8400$$

$$\Rightarrow X(5/6 + 25/36) = 8400$$

$$\Rightarrow X(56/36) = 8400$$

$$X = 5400$$

- During the first year the population of a village is increased by 5% and the second year it is diminished by 5%. At the end of the second year its population was 31500. What was the population at the beginning of the first year?

A. 35500
B. 31578
C. 33500
D. 33000
E. None of these

Answer & Explanation

Answer – B. 31578

Explanation :

$$x * 105/100 * 95/100 = 31500$$

$$x = 31500 * 100/105 * 100/95$$

$$D = 31578$$

- If Rs. 7200 amounts to Rs.10368 at compound interest in a certain time , then Rs. 7200 amounts to what in half of the time?

A. 8640
B. 8600
C. 8800
D. 8520
E. None of these

Answer & Explanation

Answer – A. 8640

Explanation :

Let rate = R% and time = n year

$$\text{Then, } 10368 = 7200(1+R/100)^n$$

$$\Rightarrow (1+R/100)^n = 10368/7200 = 1.44$$

$$\therefore (1 + R/100)^{n/2} = \sqrt{1.44} = 1.2$$

$$\therefore \text{Required amount for } n/2 \text{ yr}$$

$$= 7200(1+ R/100)^{n/2}$$

$$= 7200 \times 1.2 = \text{Rs. } 8640$$

•

- A part of 70000 is lent out at 10% annum. The rest of the amount is lent out at 5% per annum after one year. The ratio of interest after 3 years from the time when first amount was lent out is 1:2. Find the second part that was lent out at 5%.

- A.40000
- B.50000
- C.60000
- D.48000
- E.55000

Answer & Explanation

Answer – **C.60000**

Explanation :

$$10 \times 3 \times \frac{x}{5} \times 2 \times y = 1/2$$

$$x/y = 1/6$$

$$6/7 \times 70000 = 60000$$

- **There is 50% increase in an amount in 5 years at simple interest. What will be the compound interest of Rs. 12,000 after 3 years at the same rate?**

- A.Rs. 2255
- B.Rs. 2792
- C.Rs. 3580
- D.Rs. 3972
- E.None of these

Answer & Explanation

Answer – **D.Rs. 3972**

Explanation :

In S.I,

Let P=100, I=50, T=5 yrs

$$R = 50 \times 100 / 100 \times 5 = 10\%$$

In C.I,

P = 12000, T=3 yrs, R= 10%

$$C.I = [12000 \times (1 + 10/100)^3 - 1] \quad C.I = 3972.$$

- **Karthik lends a certain amount to Vignesh on simple interest for two years at 20%. Vignesh gives this entire amount to Kamal on compound interest for two years at the same rate annually. Find the percentage earning of Vignesh at the end of two years on the entire amount.**

- A.3%
- B. $3(1/7)\%$
- C.4%
- D. $5(6/7)\%$
- E.None of these

Answer & Explanation

Answer – **C.4%**

Explanation :

$$SI = 20 \times 2 = 40\%$$

$$CI = 20 + 20 + (400/100) = 44\%$$

$$\text{Diff} = 44 - 40 = 4\%$$

- **A man borrows 3000 rupees at 10% compound interest. At the end every year he pays rupees 1000 back. How much amount should he pay at the end of the fourth Year to clear all his debt?**

- A.Rs. 680.5
- B.Rs. 651.3
- C.Rs. 751.3
- D.Rs. 790.3
- E.None of these

Answer & Explanation

Answer – **C.Rs. 751.3**

Explanation :

After one year amount = $3000 \times 110/100 = 3300$

He pays 1000 back, so remaining = $3300 - 1000 = 2300$

After two year amount = $2300 \times 110/100 = 2530$

He pays 1000 back, so remaining = $2530 - 1000 = 1530$

After three year amount = $1530 \times 110/100 = 1683$

He pays 1000 back, so remaining = $1683 - 1000 = 683$

After fourth year = $683 \times 110/100 = 751.3$

- **Rahul saves an amount of 800 every year and then lent that amount at an interest of 10 percent compounded annually. Find the amount after 3 years.**

A.Rs. 1822.8

B.Rs. 2252

C.Rs. 2550.50

D.Rs. 2912.8

E.None of these

Answer & Explanation

Answer – **D.Rs. 2912.8**

Explanation :

$$800 \times (11/10)^3 = 1064.8$$

$$800 \times (11/10)^2 = 968$$

$$800 \times (11/10) = 880$$

$$\text{Total amount} = 2912.8$$

- **Find the compound interest at the rate of 8% for 3 years on that principal which in 3 years at the rate of 10% per annum gives 300 as simple interest.**

A.180.515

B.220.25

C.259.712

D.289.624

E.312.51

Answer & Explanation

Answer – **C.259.712**

Explanation :

$$SI = 300$$

$$\text{Per yr} = 100$$

$$\text{Rate} = 10\%$$

$$C.I = 1000 \times (108/100)^3 - 1000$$

$$C.I = 259.712$$

- **The difference between the total simple interest and the total compound interest compounded annually at the same rate of interest on a sum of money at the end of two years is Rs. 450. What is definitely the rate of interest per cent per annum?**

A.8400

B.4800

C.7800

D.Data inadequate

E.None of these

Answer & Explanation

Answer – **D.Data inadequate**

Explanation :

$$\text{Difference} = Pr^2/(100)^2$$

$$= (450 \times 100 \times 100)/(P \times r^2)$$

P is not given

- The CI on Rs.6000 for 3 years at 8% for first year, 7% for second year, 6% for the third year will be

A.Rs.1430
B.Rs.1530
C.Rs.1250
D.Rs.1350
E.None of these

Answer & Explanation

Answer – **D.Rs.1350**

Explanation :

$$\begin{aligned}A &= 6000 \times 108/100 \times 107/100 \times 106/100 \\&= 6000 \times 1.08 \times 1.07 \times 1.06 \\&= 7349.616 = 7350 \\CI &= 7350 - 6000 = 1350\end{aligned}$$

- Venkat and Vidhya have to clear their respective loans by paying 2 equal annual instalments of Rs.30000 each. Venkat pays at 10% pa of SI and Vidhyapays at 10% CI pa. What is the difference in their payments ?

A.200
B.300
C.400
D.500
E.None of these

Answer & Explanation

Answer – **B.300**

Explanation :

$$\begin{aligned}D &= [(30,000 \times 110/100 \times 110/100) - 30,000] - 30,000 \times 10 \times 2/100 \\&= [36300 - 30000] - 6000 \\&= 6300 - 6000 \\D &= 300\end{aligned}$$

- The difference between interest received by Vivek and Vimal is Rs.405 on Rs.4500 for 3 years. What is the difference in rate of interest ?

A.1.5%
B.2%
C.3%
D.2.7%
E.None of these

Answer & Explanation

Answer – **C.3%**

Explanation :

$$\begin{aligned}4500 \times 3/100(R_1 - R_2) &= 405 \\R_1 - R_2 &= 405 \times 100/13500 = 3\%\end{aligned}$$

•

A sum of rupees 3903 is divided between P and Q such that the share of P at the end of 8 years is equal to the share of Q after 10 years. Find the share of P if rate of interest is 4% compounded annually.

a) 2012
b) 2029
c) 2028
d) 2081
e) None of these

Answer & Explanation

Answer –c) 2028

Explanation :

$$P*(1 + 4/100)^8 = (3903 - P)*(1 + 4/100)^{10}$$

- A man borrows 2000 rupees at 10% compound interest. At the end every year he pays rupees 1000 back. How much amount should he pay at the end of the third Year to clear all his debt?

- a) 252
- b) 352
- c) 452
- d) 552
- e) None of these

Answer & Explanation

Answer – b) 352

Explanation :After one year amount = $2000 * 110/100 = 2200$ He pays 1000 back, so remaining = $2200 - 1000 = 1200$ After second year = $1200 * 110/100 = 1320$ He pays 1000 back, so remaining = $1320 - 1000 = 320$ After third year = $320 * 110/100 = 352$

- A sum of rupees 3200 is compounded annually at the rate of 10 paisa per rupee per annum. Find the compound interest payable after 2 years.

- a) 200
- b) 842
- c) 672
- d) 832
- e) None of these

Answer & Explanation

Answer – c) 672

Explanation :

Rate of interest is 10 paisa per rupee per annum. So for 100 rupees it is 1000 paise i.e. 10 percent

Now, $CI = 3200(1+10/100)^2 - 3200 = 672$

- What sum of money will amount to rupees 1124.76 in 3 years, if the rate of interest is 5% for the first year, 4% for the second year and 3% for the third year?

- a) 1500
- b) 1200
- c) 1000
- d) 1900
- e) None of these

Answer & Explanation

Answer – c) 1000

Explanation :

$$1124.76 = p*(105/100)*(104/100)*(103/100)$$

- Riya saves an amount of 500 every year and then lent that amount at an interest of 10 percent compounded annually. Find the amount after 3 years.

- a) 1820.5
- b) 1840.5
- c) 1920.5
- d) 1940.5
- e) None of these

Answer & Explanation

Answer – a) 1820.5

Explanation :

Total amount = $500 \times (1 + 10/100)^3 + 500 \times (1 + 10/100)^2 + 500 \times (1 + 10/100) = 1820.5$

• A sum of 3000 becomes 3600 in 3 years at 15 percent per annum. What will be the sum at the same rate after 9 years?

- a) 5124
- b) 5184
- c) 5186
- d) 5192
- e) None of these

Answer & Explanation

Answer – b) 5184

Explanation :

$$3600 = 3000 \times (1 + 15/100)^3$$

$$(1 + 15/100)^3 = 6/5$$

$$\text{Amount} = 3000 \times [(1 + 15/100)^3]^3$$

$$\text{Amount} = 3000 \times (6/5)^3 = 5184$$

• On a certain sum of money, after 2 years the simple interest and compound interest obtained are Rs 400 and Rs 600 respectively. What is the sum of money invested?

- a) 100
- b) 200
- c) 300
- d) 400
- e) None of these

Answer & Explanation

Answer – b) 200

Explanation :

$$400 = P \times (R/100) \times 2$$

$$600 = P \times (1 + R/100)^2 - P$$

Solve both equations to get P

• A sum of money becomes Rs 35,280 after 2 years and Rs 37,044 after 3 years when lent on compound interest. Find the principal amount.

- a) 2800
- b) 3000
- c) 3200
- d) 4000
- e) None of these

Answer & Explanation

Answer – c) 3200

Explanation :

$$37044 = p \times (1 + r/100)^3$$

$$35280 = p \times (1 + r/100)^2$$

Divide both equations to get the value of r and then substitute in any equation to get P

• A sum of money is lent for 2 years at 10% p.a. compound interest. It yields Rs 8.81 more when compounded semi-annually than compounded annually. What is the sum lent?

- a) 1000
- b) 1200
- c) 1400
- d) 1600
- e) None of these

Answer & Explanation

Answer – d) 1600

Explanation :

$$8.81 = p \cdot (1 + 5/100)^4 - p \cdot (1 + 10/100)^2$$

• A sum of rupees 4420 is to be divided between raj and parth in such a way that after 5 years and 7 years respectively the amount they get is equal. The rate of interest is 10 percent. Find the share of raj and parth

- a) 2000, 2420
- b) 2420, 2000
- c) 2480, 2420
- d) 2210, 2210
- e) None of these

Answer & Explanation

Answer – b) 2420, 2000

Explanation :

Let the share of raj and parth be R and P

$$R \cdot (1 + 10/100)^5 = (4420 - R) \cdot (1 + 10/100)^7$$

We get R = 2420, so P = 2000



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