1. Find the simple interest on Rs.500 for 9 months at 6% per month?
   A. Rs.345 B. Rs.270 C. Rs.275 D. Rs.324

   Answer: Option B
   Explanation:
   I = (500*9*6)/100 = 270

2. A man took loan from a bank at the rate of 12% p.a. S.I. After 3 years he had to pay Rs. 5400 interest only for the period. The principal amount borrowed by him was?
   Rs. 2000 B. Rs. 10000 C. Rs. 15000 D. Rs. 20000

   Answer: Option C
   Explanation:
   Principal = (100 * 5400) / (12 * 3) = Rs. 15000

3. What is the rate percent when the simple interest on Rs.800 to get Rs.160 as interest in 4 Years?
   A. 5% B. 6% C. 4 1/2% D. 3 1/2 %
   Answer: Option A
   Explanation:
   160 = (180*4*R)/100
   R = 5%

4. Reena took a loan of Rs. 1200 with simple interest for as many years as the rate of interest. If she paid Rs. 432 as interest at the end of the loan period, what was the rate of interest?
   A. 3.6 B. 6 C. 18 D. Cannot be determined
   Answer: Option B
   Explanation:
   Let rate = R% and time = R years.
   Then, (1200 * R * R) / 100 = 432
   12R2 = 432
   R2 = 36 => R = 6.

Doubles or Triples:

5. In how many years will a sum of money doubles itself at 5% per annum on simple interest?
   A. 22 years B. 20 years C. 21 years D. 29 years
   Answer: Option B
   Let the sum be 100
   Doubling sum means earning interest of 100
   Then Number years to earn 100 at 5% interest rate=100/5=20 year

6. A certain sum of money doubles itself in 10 years in how much many years will it trible itself at the same rate?

   A. 20 years B. 15 years C. 30 years D. 17 1/2 years

   Let P=100, A=200,It means I=100

   Now We want A=300,means I=200

   Years for I of Rs. 100 =10

   Years for I of Rs. 200=(10/100)*200

   =20 Years

7. A sum of money at simple interest amounts to Rs. 850 in 3 years and to Rs. 900 in 4 years. What is the sum?
   Amount accumulated in 4 years=900
   Amount accumulated in 3 years=850
   Therefore interest in 1year=(900–850)=50
   So got interest of 150 after 3 years and 200 after 4 years.
   Amount =Principal+Interest
   850=Principal+150
   So principal=850–150=700

8. the second at 5%, the whole annual interest from both the investments is Rs.144, how much was put at 3%?
   Rs.2500 B. Rs.2700 C. Rs.2800 D. Rs.5000
   Answer: Option C
   Explanation:
   (x*3*1)/100 + [(4000 - x)*5*1]/100 = 144
   3x/100 + 200 – 5x/100 = 144
   2x/100 = 56 Ⓟ x = 2800

9. The equal amounts of money are deposited in two banks each at 15% per annum for 3.5 years and 5 years respectively. If the difference between their interests is Rs.144, find the each sum?
   A. Rs.3467 B. Rs.640 C. Rs.500 D. None
   Difference = 5 – 3.5 = 1.5
   Interest = 144/1.5 = 96
   15 % --□ 96
   100%--□ ?
   i.e., 640.

10. Two equal amounts of money were deposited in two banks, each at 10% per annum, 4 years and 5 years respectively. If the difference between the interest is Rs 144, what is each sum?

Years = 5 – 4 = 1 yr

1 yr = 144 --□ 10%

?-----□ 100%

i.e. 1440.

11. A sum of Rs.2600 is lent in two parts so that the interest on the first part for a period of 3 years at 5% may be equal to the interest on the second part for 6 years at 4%. The second part is equal to

    Let the amount lent at 4% interest be Rs.x and at 5% interest be Rs.(2600−x)

    According to the question,

    $100(2600-x)\times5\times3=100x\times4\times6$

    $(2600-x)5=8x$

    $2600\times5-5x=8x$

    $2600\times5=13x\Rightarrow x=1000$

    Hence, the sum lent at 4% is Rs.1000.

12. Nitin borrowed some money at the rate of 6% p.a. for the first three years, 9% p.a. for the next five years and 13% p.a. for the period beyond eight years. If the total interest paid by him at the end of eleven years is Rs. 8160, how much money did he borrow?
    Rs. 8000 B. Rs. 10000 C. Rs. 12000 D. Data inadequate
    Answer: Option A
    Explanation:
    Let the sum be Rs. x. Then,
    [(x * 6 * 3)/100] + [(x * 9 * 5)/100] + [(x * 13 * 3)/100] = 8160
    18x + 45x + 39x = (8160 * 100)
    020102x = 816000 => x = 8000.

13. Rs.800 amounts to Rs.920 in 3 years at simple interest. If the interest is increased by 3%, it would amount to how much?
    Rs.1056 B. Rs.1112 C. Rs.1182 D. Rs.992
    Answer: Option D
    Explanation:
    (800*3*3)/100 = 72
    920 + 72 = 992

14. What amount does Kiran get if he invests Rs. 18000 at 15% p.a. simple interest for four years?

    Rs. 24800 B. Rs. 28400 C. Rs. 24400 D. Rs. 28800
    Answer: Option D

Explanation:
Simple interest = (18000 * 4 * 15)/100 = Rs. 10800
Amount = P + I = 18000 + 10800 = Rs. 28800

15. Rs. 800 becomes Rs. 956 in 3 years at a rate of S.I. If the rate of interest is increased by 4%, what amount will Rs. 800 become in 3 years?
Rs. 1020.80 B. Rs. 1025 C. Rs. 1052 D. None of these
Answer: Option C
Explanation:
S.I. = (956 - 800) = Rs. 156.
Rate = (100 * 156) / (800 * 3) = 6 1/2 %
Now rate = (6 1/2 + 4) = 10 1/2 %
New S.I. = (800 * 21/2 * 3/100) = Rs. 252
New amount = (800 + 252) = Rs. 1052.

Finding Time Period:

16. In what time will Rs.4000 lent at 3% per annum on simple interest earn as much interest as Rs.5000 will earn in 5 years at 4% per annum on simple interest?
8 1/3 years B. 9 years C. 7 1/2 years D. 7 1/3 years
Answer: Option A
Explanation:
(4000*3*N)/100 = (5000*5*4)/100
N= 8 1/3

17. A certain sum becomes Rs. 20720 in four years and 24080 in six years at simple interest. Find sum and rate of interest?
Explanation:
Let the interest for one year be x.
As amount = Principal + Interest, we have
P + 4x = 20720 --- (1) ; P + 6x = 24080 --- (2)
Solving the equations (1) and (2), we can get
P = Rs. 14000 and x = Rs. 1680
Interest for one year on Rs. 14000 is Rs. 1680
So, R = (100 * 1680)/(14000 * 1) = 12% p.a.

A part of certain sum of money is invested at 9% per annum and the rest at 12% per annum, if the interest earned in each case for the same period is equal, then ratio of the sums invested is?
Explanation:12:9 =4:3

Compound Interest

Finding Rate of Interest

1) Find the compound interest and the amount on Rs.8000 at 5% per annum for 3 years when C.I is reckoned yearly?

Rs.1261 B. Rs.1440 C. Rs.1185 D. Rs.1346

Answer: Option A

Explanation:

A = $8000(21/20)^3$

= 9261

= 8000

1261

2) What amount does Kiran get if he invests Rs.8000 at 10% p.a. compound interest for two years, compounding done annually?

Rs.9630 B. Rs.9680 C. Rs.9610 D. Rs.9650

1		2		1
8000		800		80
8000	+	1600	+	80 = 9680

3) Find C.I. on Rs. 3000 at 10 % per annum for 2 years?

1	2	1	
3000	300	30	
	600 +	30 = 630	

4) Find C.I. on Rs. 80000 at 10% per annum for 1 ½ years, if it is compounded half – Yearly.

R = 10/2 = 5 %

N = 1 ½ * 2 = 3

Applying Pascal's Triangle,

1	3	3		1
80000	4000	200		10
	12000 +	600	+	10 = 12610.

5) Find C.I. on Rs. 6000 at 20 % per annum for 6 months compounded quarterly.
R = 20/4 = 5 %
N = 6*4 = 24 months = 2 years

1	2		1
6000	300		15
	600	+	15 = 615

6) Find the C.I. on a sum of Rs.16000 for 9 months at 20% per annum, interest being compounded quarterly?
Rs.17684 B. Rs.1684 C. Rs.2522 D. Rs.3408
R = 20/4 = 5 %
N = 9* 4 = 36 months = 3 years

1	3		3		1	
16000	800		40		2	
	2400	+	120	+	2	= 2522

7) Simple interest on a sum at 4% per annum for 2 years is Rs.80. The C.I. on the same sum for the same period is?
A. Rs.81.60 B. Rs.160 C. Rs.1081.60 D. Rs.99
Answer: Option A
Explanation:
SI = 40 + 40
CI = 40 + 40 + 1.6 = 81.6

8) At the end of three years what will be the compound interest at the rate of 10% p.a. on an amount of Rs.20000?

1	3		3		1	
20000	2000		200		20	
	6000	+	600	+	20	= 6620

To find Amount:

9) If Rs.7500 are borrowed at C.I at the rate of 4% per annum, then after 2 years the amount to be paid is?
Rs.8082 B. Rs.7800 C. Rs.8100 D. Rs.8112

1	2	1
7500	300	12

7500 + 600 + 12 = 8112.

10) Find the amount on Rs.5000 in 2 years, the rate of interest being 4% per first year and 5% for the second year?

Rs.4600 B. Rs.5640 C. Rs.5460 D. Rs.5604

Answer: Option C
Explanation:
500004/100 * 105/100 ● 5460

Finding Duration:

11) Rs.8000 become Rs.9261 in a certain interval of time at the rate of 5% per annum of C.I. Find the time?

4 years B. 6 years C. 2 years D. 3 years

Answer: Option D
Explanation:
$9261 = 8000(21/20)^N$
$(21/20)^3 = (21/20)^N \Rightarrow N = 3$

12) The compound interest on rs.30000 at 7% per annum is Rs.4347. The period is

A) 2 years B) 2.5 years
C) 3 years D) 4 years

Amount = Rs.(30000+4347) = Rs.34347
let the time be n years
Then,30000(1+7/100)^n = 34347
(107/100)^n = 34347/30000 = 11449/10000 = (107/100)^2
n = 2years

13) In what time will Rs. 1000 become Rs. 1331 at 10% per annum compounded annually?

A) 1years **B)** 2years

C) 3years **D)** 4years

Principal = Rs. 1000; Amount = Rs. 1331; Rate = 10% p.a. Let the time be n years. Then,
[1000 (1+ (10/100))^n] = 1331 or (11/10)^n = (1331/1000) = (11/10)^3
n = 3 years

Finding Rate of Interest:

14) The C.I. on a certain sum for 2 years Rs.41 and the simple interest is Rs.40. What is the rate percent?
4% B. 5% C. 6% D. 8%
Answer: Option B
Explanation:
SI = 20 + 20
CI = 20 + 21
20 ---- 1
100 ---- ? => 5%

15) A sum of money deposited at C.I. amounts to Rs.2420 in 2 years and to Rs.2662 in 3 years. Find the rate percent?
15% B. 10% C. 7 1/2 % D. 8%
Answer: Option B
Explanation:
2420 □ 242
100 □ ? = 10%

16) Raj invested an amount of Rs.17400 for two years. Find the rate of compound interest that will fetch him an amount of Rs.1783.50 at the end of two years?
8% p.a. B. 6% p.a. C. 4% p.a. D. 5% p.a.
1783.50/2 = 891.75 = 892
ROI = 892/17400 * 100 = 5.12 = 5 %

17) Compound interest earned on a sum for the second and the third years are Rs.1200 and Rs.1440 respectively. Find the rate of interest?
18% p.a. B. 22% p.a. C. 20% p.a .D. 24% p.a.
Answer: Option C
Explanation:
Rs.1440 - 1200 = Rs.240 is the interest on Rs.1200 for one year.
Rate of interest = 240 / 1200 * 100 = 20% p.a

18) What sum of money put at C.I amounts in 2 years to Rs.8820 and in 3 years to Rs.9261?
Rs.8000 B. Rs.8400 C. Rs.7500 D. None
Answer: Option A
Explanation:
8820 ---- 441

100 ---- ? ● AA 5%
P*(21/20)^2 = 8820
P=8820* (400/441)
P=> 8000

Twice or Thrice

19) A sum of money place at compound interest doubles itself in 4 years. In how many years will it amount to eight times itself?
16 B. 8 C. 12 D. 20
Trick: Time= (2) ^ 3=4
There for 3*4=12 years
2 times ---------- 4
8times (2^3)----- 4*3
(Or)
100------->200 in 4 years
200------->400 in again 4 years then,
400------->800 in 4 years again, thus
the time becomes= 4+4+4= 12 years.

20) The sum of money at compound interest amounts to thrice itself in 3 years. In how many years will it be 9 times itself?
18 B. 12 C. 9 D. 6

Let, 100 be the amount.
100.....300.....3 years
100.....900.....+ 3 years
So, Total Time = 3 + 3 = **6 years.**

Finding sum

21) A sum of money lent at compound interest for 2 years at 20% per annum would fetch Rs.482 more, if the interest was payable half yearly than if it was payable annually . The sum is

A) 10000 B) 20000

C) 40000 D) 50000

Effective interest in first case :

= 20+20+(20x20)/100 = 44%

Effective interest in second case :

= 21+21+(21x21)/100 = 46.41%

Given (46.41 - 44)% of principle = 482

Principle = 482/2.41 x 100 = Rs 20000

(Or)

Explanation:

$P(11/10)^4 - P(6/5)^2 = 482$

P = 2000

22) How much more would Rs.20000 fetch, after two years, if it is put at 20% p.a. compound interest payable half yearly than if is put at 20% p.a. compound interest payable yearly?

Rs.482 B. Rs.424 C. Rs.842 D. Rs.512

Answer: Option A
Explanation:
$20000(11/10)^4 - 20000(6/5)^2 = 48$

A certain sum amounts to Rs. 8000 in 2 years and to Rs. 10000 in 3 years. Find the sum

Ratio of amount 2 years and 3 years

8000 : 10000

⇒ 4 : 5 → for 1 year

⇒ 16 : 25 → for 2 years

Here, 8000 is 25

So, 8000 × 16/25

⇒ 5120

The compound interest on a certain sum at $16\frac{2}{3}$% p. a for 3 years is Rs. 6,350 What will be the simple interest on the same at the same rate for $5\frac{2}{3}$ years?

Rate = $16\frac{2}{3} = \frac{1}{6}$ and time = 3 years and CI = 6350

Ratio of P to A = $6^3 : 7^3$ = 216 : 343

⇒ 343 – 216 = 127

⇒ 127 unit = 6350

⇒ 1 unit = 50

⇒ 216 unit = 10,800

Now,

P = 10800, $r = 16\frac{2}{3}\% = \frac{50}{3}\%\ and\ T = 5\frac{2}{3} = \frac{17}{3} year$

Interest rate for 1 year = 50/3 %

Interest rate for 17/3 year = 850/9 %

Simple interest = 10800 × (850/900) = 10200

Difference Between

23) The difference between simple interest and C.I. at the same rate for Rs.5000 for 2 years in Rs.72. The rate of interest is?

10% B. 12% C. 6% D. 8%

Answer: Option B

Explanation:

$5000 = 72(100/R)^2$

$5 R^2 = 720 \Rightarrow R = 12$

24) The difference between the compound interest compounded annually and simple interest for 2 years at 20% per annum is Rs.144. Find the principal?

Rs.3000 B. Rs.3300 C. Rs.3600 D. Rs.3900

Answer: Option C

Explanation:

$P = 144(100/5)^2$

P = 3600

25) The difference between compound and simple interest on a certain sum of money for 3 years at 6 2/3% p.a is Rs.184. Find the sum?

Rs.12000 B. Rs.14200 C. Rs.17520 D. Rs.13500

Answer: Option D

Explanation:

$P = (184*10^6) / [6\ 2/3 * 6\ 2/3 *(300*6\ 2/3)]$

P = 13500