SIMPLE INTEREST & COMPOUND INTEREST

1. Simple Interest = PNR/100

   P – Principal

   N- Years

   R – Rate

   Amount = P+SI

   [Principal+Simple Interest]

A = P+I= P + PNR/100 = P [1 +nr/100]
I = A- P
P= 100I/nr
R= 100 I/pn
N= 100 I / pr

2. Sum doubles itself ____? NR - 100

   Doubles = NR – 100

   Triples = NR – 200

   4-5 times = NR = 350

3. If rate & year is equal

   Eg : S I on sum of money is 1/9 the if sum r & n is equal. Fid r?

   S I = 1/9 P = SI/P = 1/9

   $\sqrt{1/9*100} = 10/3 = 3\ 1/3\%$

4. Recuring deposit (monthly)

   $P * n (n + 1)/ 24 * R / 100 = S I$

   Eg : Vaideesh deposited rs 500 at the beginning of every month for 10 years in post office . If rate of interest is 2.5 % find the amount he will receive at end of 10 years.

   P (n * (n + 1)/ 24 * r / 100 = S I

   P = sum * months

= 500 * 10yrs

= 500 * (10 * 12 months)

P = 60000

N = 10 yrs
N = 10 * 12 months
120 months

P N * (n + 1) / 24 * r / 100 = S I

500 * 120 * 121 * 2.5 / 24 * 100

5 * 5 * 121 * 2.5 = S I

S I = 7562.5

Amount = P + SI

= 60000 + 7562.5

A = 67562.5

Simple Interest

1. **A sum of money becomes 6 times in 40 years. final rate of interest**

   A. 10.5% B. 11.5% C. 12.5% D 13.5%

   Ans – C

   NR = 500 [6 times to take 500]

   40 * R = 500

   R = 12.5 %

2. **A sum of money becomes 8 times of 20% interest per annum. in certain period of time. find no of years.**

   A. 10 B. 20 C. 30 D 35

   Ans – D

   NR = 700

   N × 20 = 700

   N = 35 yrs

3. **A certain sum of money amounts for ₹ 7100 in 6 years ₹ 9200 in 12 years. find principal rate of the interest?**

   A. 5000, 7% B. 5500 , 7.5 % C. 6000, 8% D 6000, 8.5%

   Ans – A

   12 years - 9200

   (-) 6 years - 7100

   6 years - 2100 (S I)

   P = 7100 – 2100 = 5000 ₹

   S I = PNR / 100 => 5000×6×R/ 100 = 2100

   6R = 427

   R = 7%

4. At a simple interest of 6%, 7 % for consecutive years the interest earned is ₹1690 find principal.

A. 14000 B. 13000 C. 14000 D 15000

Ans – B

SI = $\frac{PNR}{100}$

1690 =($\frac{P\times I\times R}{100}$) +($\frac{P\times I\times R}{100}$)

1690 = ($\frac{6+7}{100}$)

P = $\frac{1690\times 100}{13}$ => ₹ 13000

(or)

6 + 7 = 13%

13% = 1690

1% = 130

100% = 13000

5. At a simple interest of 4%, 5%, and 6% for 3 consecutive years , the interest required is ₹2850 find principal.

A. 17000 B. 18000 C. 19000 D 13000

Ans – C

4 + 5 + 6 = 15 %

15% = 2850

1% = 190

So, 100 = 19000

6. A sum was put at SI at a certain rate for 4 years . If it puts at 2% highest rate it would become ₹ 480 more find some

A. 6000 B. 12000 C. 15000 D 7000

Ans – A

4 years -> if 2% high rate

4year = 480
1 year = 120
2% = 120
1× = 60
100 % = ₹6000

7. The SI on a sum of money will be ₹ 1200 after 10 years. If the principal its tripled after 5 years. what will be the total interest at the end of 10 years?

A. 2400 B. 3600 C. 4800 D 2000

Ans – A

10 years - 1200

1st year - 8600

After 5 years - 1800

2400

At the end of 10 th year - 2400

If the principal triples interest also triples

8. A sum of ₹ 4410 is lent out in 3 parts in such a way the interest on 1st part at 2% for 2 years, 2nd part at 3% for 3 years, 2nd part at 3% for 3 years, 3rd part at 4 % for 4 years are qual find the parts.

A. 3240, 380, 820 B. 3000, 400, 1000 C. 3240, 360, 810 D 3500,1050, 360

Ans – A

A. B. C. D.

Ans – C

A + B + C = 4410 -→ (1)

(2% × 2) A = (3% × 3) B = (4% × 4) C

4A = 9B = 16C = x

A = 9B = 4C = x

A = x : B = x/9 = : C = x/4

In (1) => x/1+x/9+ x/4 = 4410

(36+4+9)x/36 = 4410

49x = 4410×36

X = 3240

⇨ 4 = 3240

B = x/9 = 3240/ 9 = 360

C = x/4 = 3240 /4 = 810

A : B : C = 3240 : 360 : 810

9. The S I on a sum of money will be ₹ 7500 after 15 years. If the principal is doubled after 10 years. What will be the total interest at the end of 15 years?

A. 12500 B. 17250 C. 15000 D 20000

Ans – C

15 years - 7500

1st 10 years – 5000

If at 10th-year principal doubled

Interest = 10000

At 15th-year-end - 5000

10.If the S I for 4 years is equal to 20% of the principal. then it will be equal to the principal after how much time?

A. 10 B. 20 C. 40 D 50

Ans – B

4 years - 20%

×5 ×5

20 years = 100%

11.Lokesh borrowed ₹32000 from a money lender at a particular rate of 81. After 4 years he paid ₹48640 to settle his debt. At what rate of interest he borrowed the money?

A. 15% B. 13% C. 12% D 18%

Ans – B

PNR / 100 = SI

P = 32000

A = 48640

SI = P –A

= 16640

32000×4×R/100 = 16640

n = 4

R = 13%

12.Simple interest on ₹ 2000 at 20% per annum for 292days?

A. 420 B. 520 C. 230 D 320

Ans – D

292 days = 4/5 years

SI = PNR / 100

= 2000/100×4/5 ×20

SI = ₹320

13. Kamaraj invested ₹1,00,000 in a bank that pays an interest of 10% per annum. He withdraws the amount after 2 years and 3 months finding the interest he receives

A. 22500 B. 25200 C. 55000 D 52550

Ans – A

PNR/100 = SI

P – 100000

N – 2 yr 3 m = 27/ 12yr

100000×27/12 ×10×1/100 = SI

SI = 22500

14. Asha lent ₹ 5000 to amitha for 4 years and ₹ 3000 to usha for 2 years on simple interest at the same rate of interest and received ₹ 2600in all from both of them as interest. the final rate of interest?

A. 10% B. 20% C. 30% D 45%

Ans – A

Anita

P = 5000

N = 4 yrs

Usha

P = 3000

N = 2 yrs

Total interest received = ₹2600

5000×4×R/100 + 3000×2×R/100 = 2600

200R + 60R = 2600

260 R = 2600

R = 10%

15. A sum of money at simple interest amounts to ₹ 847 in 3 years and to ₹ 896 in 4 years. find sum?

A. 650 B. 700 C. 698 D 690

Ans – B

4 years = 896

3 years = 847

(-) 49 (-)

For 3 years = 3 × 49 = ₹ 147

P = A – I = 847 – 147

P = ₹ 700

16. Aruna took a loan of ₹1200 with simple interest for as many years as the rate of interest. if the paid ₹432 as interest at the end of the loan period what was the rate of interest?

A. 7% B. 8% C. 6% D 4%

Ans - C

SI = PNR/ 100 p = 1200

432 = 1200 × X x X /100 N= x N = x

R = X

$X^2 = 36$ SI = 432

X = 6

X = 6%

17. At what rate print per annum will a sum of money double in 4 years?

A. 12.5% B. 25% C. 40% D 35%

Ans – B

NR = 100

4 × R = 100

R = 25%

18. The simple interest on a sum of money in 5 years at 12% per annum is ₹3100 less than the simple interest accused on the same sum in 7 years at 10% per annum find sum?

A. 35000 B. 31000 C. 13000 D 53000

Ans – B

PNR/ 100= 51

P × 12 × 5 / 100 = 0.6p

P × 10 × 7/100 = 0.7p

0.7p - 0.6p = 3100

0.1p = 3100

P = 31000

19. Find the difference in amount and principal for 14000 at the rate of 5% annual interest in 6 years?

A. 2400 B. 9800 C. 9200 D 4800

Ans – C

SI = A- P

SI = pnr/100

= 14000 × 6 × 5 / 100

SI = 4200

20. A certain sum becomes 3 fold at 4% annual interest. At what rate it will become 5 fold?

A. 10% B. 12% C. 8% D 9%

Ans – C

SI = (3P - P) = 2P

2P = P × 4× R / 100

P = P × 2 × r / 100

R = 50 years

For another rate

SI = (5p - p) = 4p

4p = p×r× 50/ 100 = pr/ 2= 4p = pr/2

R = 8%

21.Priya deposited Rs 5000 for 3 years at 12% per annum. find simple interest and amount received by her at the end of 3 years?

A. 1800 , 6800 B. 1600 , 6600 C. 2000 , 7000 D 1300 , 6300

Ans – A

PNR/ 100 = SI

P= 5000

N = 3

R = 12%

= 5000×3×12/100 = SI = 1800

SI + Principle = Amount

1800+ 5000 = 6800

22.Find the simple interest on Rs 2500 3.5% per annum for 6 months.

A. 35.3 B. 8.75 C. 87.5 D 16.25

Ans – B

PNR/ 100 = SI

P = 500

N = 6 months 6/12 years

R = 3.5%

500× 6× 3.5/ 100× 12 = SI

SI = 8.75

23.A sum of Rs 3200 gives a simple interest of 504 in 2 years 4 months find R?

A. 6 ¾ % B. 9 ¾ % C. 6 4/3 % D 9 4/3 %

Ans – A

PNR / 100 = SI

3200 × 28 × R / 12 × 100 = 504

S = 504

P = 3200

N = 2 yr 4 m = 24 + 4 = 28 month

N = 28/ 12

R × 16 / 3 = 9

R = 9 × 3 / 4 = 27/4 = 6 ¾ %

24.The simple interest on Rs 8000 certain rate of interest for 7 years is Rs 3840 what is the rate of interest per annum?

A. 5.85 % B. 4.85 % C. 6.85 % D 8.65 %

Ans – C

X /100 × 8000 = 3840

X = 48

For 7 years = 48%

1 year = 6.85%

(Or)

PNR / 100 = SI

8000 × 7 × R / 100 = 3840

R = 48 / 7 = 6.85%

25.Find the amount when Rs 12500 is interested for 146 days at 18%

A. 12400 B. 13300 C. 12300 D 13400

Ans – D

PNR / 100 = SI

P = 12500

N = 146 Days = 146 / 365 days

R = 18%

12500 × 146 × 18 / 365 × 100 = SI

SI = 900

SI + P = A

900 + 12500 = 13400

26.Find the simple interest for ₹ 88000 from 21 May 2022 to 2 August 2022 at 15%

A. 2460 B. 2640 C. 2540 D 2600

Ans – B

PNR / 100 = SI

N --------? 73/365

21may - 30 may = 11days

1 Jun - 30 Jun = 30 days

1 July - 31 July = 31 days

1 Aug = 1 day

= 73 days

88000 × 73 × 15 / 100 × 365 = SI

176 × 73 × 15 / 73 = SI

SI = 640

27. Interest on certain sum of money for 5 1/3 years @ 3 ¾ % per annum is 720 there sum is

A. 2400 B. 3400 C. 3600 D 2600

Ans – C

PNR / 100 = SI

P ----?

N = 51/3 = 16/3 year

R = 3 1/4 = 15/4 %

SI = 720

P × 16 × 15 / 3 × 100 × 4 = 36

P = 36 × 100

P = 3600 ₹

28. Vanathi invested Rs 30000 at the rate of 6% simple interest/annum she received Rs 35000 after some years find the number of years.

A. 25/9 B. 9/25 C. 6/25 D 25/6

Ans – C

PNR / 100 = SI A = 35000 N - ?

P = 30000 R = 6%

SI = 5000

30000 × N × 6 / 100 = 25

N = 25 / 3 × 3 = 25/9

29. A sum of Rs 55000 amounts to Rs 88000 in 3 years at the rate of simple interest what is the rate of interest.

A. 15 B. 20 C. 25 D 30

Ans – B

PNR / 100 A = 88000

P = 55000

SI = 33000

55000 × 5 × R / 100 = 100

R = 100 / 5 = 20%

(or)

X / 100 = 55000 = 11000 3 yrs = 88000

X / 100 = 55000 = 20 1 yrs = 55000

For 3 years = 33000

X = 20% For 1 year = 11000

30. A sum of money at simple interest amounts to Rs 625 in 3 years and Rs 690 in 4 years find sum.

A. 820 B. 430 C. 195 D 65

Ans – B

4 yrs = 690 for 1 yr = simple interest

3 yrs = 625

1 yr = 65 for 3 yrs = 65 × 3 = 195

Then

3 years amount

3 years simple interest

625 + 195 = Rs 430

Principle = ₹ 430

Compound Interest

1. Compound annually = $A = P\left(1+\frac{r}{100}\right)^n$
2. Compounded half yearly = $A = P\left[1+\frac{1}{2}\left(\frac{r}{100}\right)\right]^{2n}$
3. Compounded quatelly = $A = P\left[1+\frac{1}{4}\left(\frac{r}{100}\right)\right]^{4n}$

P = Principle

R = Rate

N = Years

A = Amount

Ci = Compound interest

4. Difference between CI & SI for 2 years = $P\left(\frac{r}{100}\right)^2$
5. Difference between CI and SI for 3 years = $p\left(\frac{r}{100}\right)^2\left(3+\frac{r}{100}\right)$
6. Difference between CI and SI
   If 'P' not given

$2\ yrs = \frac{SI}{CI} = \frac{200}{200+r}$

$3\ yrs = \frac{SI}{CI} = \frac{3000}{r^2+300r+30000}$

Eq : n = 2yrs r = 4% SI = 80

Find CI

$= \frac{SI}{CI} = \frac{200}{200+r}$

$$\frac{80}{CI} = \frac{200}{200+4} \Rightarrow CI = \frac{204\ X\ 8}{200}$$

CI = 81.6

7. Doubles itself or triples itself

Eq :

2 times -→ 5 years

8 times -→ ? (x)

2^3

3 × 5 = 15 years

➔ If doubles given write as 2^x

2 times -→ 5 years

8 times -? (x)

2^3

3 × 5 = 15 years

If doubles given write as 2^x

Eg :

3 times --→ 4 yrs

27 times -→ ?

3^3

3 × 4 = 12yrs

If triples given write as 3^x

SI < CI

I year CI = SI

Pnr / 100 = p $\left(1+\frac{r}{100}\right)^2$ ($3+\frac{r}{100}$)

= 80

Simple Interest	Compound Interest
The principle won't change	The principle changes every year
Interest is low	Interest high
1st year-end SI = CI	1st year-end CI = SI

Compound Interest

1. Calculate Compound interest for Rs 50000 after 5 years at 5% annum

A. 5125 B. 5025 C. 5225 D 5525

Ans – A

A = $\frac{Pnr}{100} = p\left(1+\frac{r}{100}\right)^n$ P = 50000

R = 5 %

N = 2

$$A = p\left[1+\frac{r}{100}\right]^n$$

$$A = 5000\left[1+\frac{5}{100}\right]^2$$

$$= 5000\left[1+\frac{1}{20}\right]^2$$

$$= 5000\left[\frac{21}{20}\right]^2$$

$$= 5000\ X\ \frac{21}{20}\ X\ \frac{21}{20}$$

$$A = 55125 \quad \rightarrow \quad 55125 = 5000$$

Ans = 5125

(or)

$$\frac{5}{100}\ X\ 50000 = 2500$$

$$\frac{5}{100}\ X\ 52500 = 2625$$

= 5125

2. At what rate of compound interest Rs 15625 will become Rs 18225 in 2 years

A. 7% B. 5% C. 8% D 12%

Ans – C

$$15625\ X\ \frac{x}{100}\ X\ \frac{x}{100} = 18225$$

$$x^2 = \frac{4\ X\ 4\ X\ 18225}{25}$$

$$x^2 = 4\ X\ 4\ X\ 729$$

$$x = 4\ X\ 27$$

$$x = 108\% \rightarrow [108 - 100]$$

= 8%

3. The Compound interest on Rs 8000 at 15% per annum is Rs 4167. The period is ?

A. 2 B. 3 C. 4 D 2 ½

Ans – B

P = 8000

Ci = 12167

R = 15%

$$CI = p\left[1+\frac{r}{100}\right]^n$$

$$8000\ X\left[1+\frac{15}{100}\right]^n = 12167$$

$$8000\ X\left[\frac{23}{20}\right]^n = 12167$$

$$\left[\frac{23}{20}\right]^n = \frac{12167}{8000}$$

$$\left[\frac{23}{20}\right]^n = \left[\frac{23}{20}\right]^3$$

n=3 years

4. Find CI on Rs 18000 compound semi annual for 1 ½ years at 10%

A. 2387.25 B. 2783.25 C. 2837.25 D 2783.25

Ans – C

$$=> 18000\ X\ \frac{150}{100}\ X\ \frac{150}{100}\ X\ \frac{150}{100}$$

$$=> 18000\ X\ \frac{21}{20}\ X\ \frac{21}{20}\ X\ \frac{21}{20}$$

$$=> \frac{441\ X\ 21\ X\ 9}{4}$$

P-18000 → 6 month
N-$1^1/_2$ yr → 6 month
R=10% → 6 month

$$\frac{12\ months}{6\ months} = \frac{10\%}{x}$$

X=5%

$$=> \frac{9261\ X\ 9}{4}$$

$$=> \frac{83349}{4}$$

$$=> 20837.25$$

$$20837.25 - 20000.00 = 2837.25$$

2837.25

5. Find compound interest on Rs 12000 for 1 year 3 months at 20% is per annum when interest calculated half yearly.

A. 3624 B. 2634 C. 3264 D 3246

Ans – D

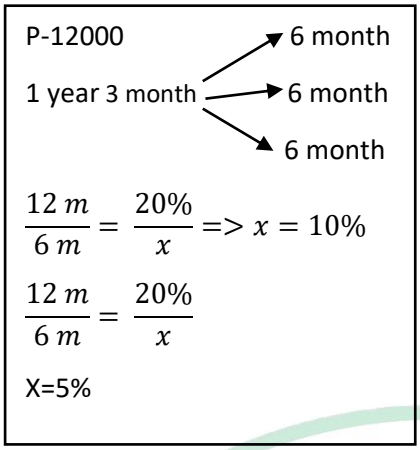
$$=> 12000\ X\ \frac{110}{100}\ X\ \frac{110}{100}\ X\ \frac{105}{100}$$

$$=> 6\ X\ 11\ X\ 11\ X\ 21$$

$$=> 121\ X\ 21\ X\ 6$$

$$=> 15246$$

$$SO = 15246 - 12000$$



$$\frac{12\ m}{6\ m} = \frac{20\%}{x} => x = 10\%$$

$$\frac{12\ m}{6\ m} = \frac{20\%}{x}$$

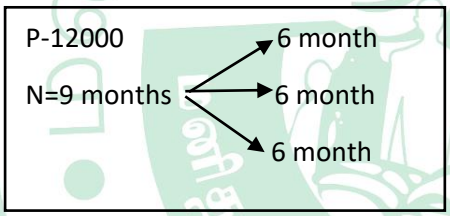
X=5%

=> 3246

6. Find CI on Rs 100000 for 9 months at 24 % per annum when interest compounded quarterly.

A. 11091.6 B. 10191.6 C. 19110.6 D 19101.6

Ans – D



r=24%

$$\frac{12m}{3m} = \frac{24\%}{x} => x = 6\%$$

$$=> 100000\ X\ \frac{106}{100}\ X\ \frac{106}{100}\ X\ \frac{106}{100}$$

$$=> \frac{106\ X\ 106\ X\ 106}{10}$$

=> 119101.6

SO => 119101.6-100000

₹ 19101.6

7. A sum of money placed at CI doubles itself in 9 years it will amount to 16 times at the same rate of interest in?

A. 32 B. 36 C. 38 D 30

Ans – B

9 years → 2 times

? → 16 times] → 2^2

Write 16 as intimes of 2

$2^4 = 16$

$4 \times 9 = 36$ years

8. A sum of money placed at compound interest triples itself in 11 years. it will amount to 27 times in how many years at the same rate of interest?

A. 11 years B. 33 years C. 22 years D 44 years

Ans – B

11 years → 3 times

? → 27 times

$3^3 = 27$

$3 \times 11 = 33$ years

9. A sum of money put at CI accounts to Rs. 61875 account to 16875 in first year and 18225 in 2 years the sum of money.

A. 15625 B. 12625 C. 13625 D 18625

Ans – A

$$A = P\left[1 + \frac{R}{100}\right]^n \rightarrow (1)$$

$$\frac{P\left(1 + \frac{R}{100}\right)^2}{P\left(1 + \frac{R}{100}\right)^1} = \frac{18225}{16875}$$

$$\left(1+\frac{R}{100}\right)=\frac{27}{25}\rightarrow ①$$

$$16875 = P\left(\frac{27}{25}\right)^1$$

$$p = \frac{25\ X\ 16875}{27}$$

P= 25 × 625

$$P = 15625\ ₹$$

10.Find the rate of interest at CI on Rs 4096 at end of 2 years amount to Rs 4624?

A. 6.5 % B. 6.75 % C. 6.25 % D 6.35 %

Ans – C

$$A = P\left(1+\frac{R}{100}\right)^n$$

$$4624 = 4096\left(1+\frac{R}{100}\right)^2$$

$$289 = 256\left(1+\frac{R}{100}\right)^2$$

$$\sqrt{\frac{289}{256}} = 1+\frac{R}{100}$$

$$1+\frac{R}{100}=\frac{17}{16}$$

$$\frac{100+R}{1000}=\frac{17}{16}$$

$$100+R=\frac{17\ X\ 25}{4}$$

$$R = \frac{17\ X\ 25}{4} - 100$$

$$R = \frac{425 - 400}{4}$$

$$R = \frac{25}{4}$$

R = 6.25 %

11. Find the difference between simple interest and compound interest on Rs 50000 for 2 years at 6% per annum compounded annually.

A. 180 B. 170 C. 160 D 150

Ans – A

The difference between CI and SI for 2 years $= P\left(\frac{r}{100}\right)^2$

$$=> 50000\left(\frac{6}{100}\right)^2$$

$$=> 50000\ X\ \frac{6}{100}\ X\ \frac{6}{100}$$

=> 180

Shortcut

50000 → 6 % => ?

50000 × 6/100 = 3000

6 % of 3000 = 180

12. Find the difference between Si and CI on Rs 180000 for 2 years 12% annum compound annually?

A. 2770 B. 2792 C. 2592 D 2512

Ans – C

$$=> P\left(\frac{r}{100}\right)^2$$

$$=> 180000\ X\ \frac{12}{100}\ X\ \frac{12}{100}$$

$$=> 2592$$

13.Tanya invester 12000 business she would be paid interest at 10% per annum compounded annually find amount at the end of the year in the interest for 3rd year

A. 15700, 4000 B. 14520, 1452 C. 15420, 1542 D 17650, 1765

Ans – B

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

$$= 12000\left(1 + \frac{10}{100}\right)^2$$

$$= 12000\ X\ \frac{11}{10}\ X\ \frac{11}{10}$$

A = 14526

The interest for 3rd year = 14520

2) $I = \frac{PNR}{100}$

$$= \frac{14520\ X\ 1\ X\ 10}{100}$$

I = 1452

14.An amount of Rs 60000 is taken as a loan at 4% for 1 year. find the difference in amount if it (i) compounded annually (ii) completed half yearly

A. 26 B. 28 C. 24 D 22

Ans – C

$$SI = \frac{PNR}{100} = \frac{60000\ X\ 1\ X\ 4}{100}$$

Yearly $SI = 2400$

Half yearly $P = 60000$

$$R = 2\%$$

$\times^{1}$ $\times^{2}$

= 1200 24

+ 2400 + 24 = 2424

Difference = 2424 - 2400 [2 years take 2 1

= 24

15.Mani took a loan of Rs 24000 from a bank if the rate of interest is 5% is per. find the difference in amount he would be paying after 1 years if the interest.

(i) compounded annually

(ii) completed half yearly

A. 15 B. 30 C. 10 D 12

Ans – A

Yearly $P = \frac{PNR}{100}$

$$= \frac{24000\ X\ 1\ X\ 5}{100}$$

$$= 1200$$

$$P = 2400$$

Half yearly $R = 2.5\%$

600×2 15×1

Difference $= 1215 - 1200$

$= 15$

16.16. Find the CI on Rs 30000 for 3 years if the rate of interest are 5%,10%, 15% for I , II, III, years resp.

A. 9760.5 B. 9847.5 C. 9560.5 D 9857.5

Ans – B

$$A = P\left(1 + \frac{R}{100}\right)^n$$

$$= 30000\ X\ \frac{105}{100}\ X\ \frac{105}{100}\ X\ \frac{105}{100}$$

$$A = 39847.5$$

CI = A – P

= 39847 – 30000

CI = 9847. 5

17.Find the amount of 75000 for 3 years if the rate of interest is 6%, 12%, & 24% for 3 consecutive years.

A. 110,409. 6 B. 1, 00, 409 C. 120140 D 101409.6

Ans – B

$$A = P\left(1 + \frac{R}{100}\right)^n$$

$$= 75000\ X\ \left(1 + \frac{6}{100}\right)\left(1 + \frac{12}{100}\right)\left(1 + \frac{24}{100}\right)$$

$$= 75000\ X\left(\frac{53}{50}\right)\ X\ \left(\frac{28}{25}\right)\ X\ \left(\frac{31}{25}\right)$$

= 110409.6

18.A sum of Rs 5200 deposited at CI doubled after 4 years. Then after 16 years, it will be?

A. 41600 B. 83200 C. 20800 D 10400

Ans – B

4 years doubled = 10400 × 2

+4 -- 8 years = 20800 × 2

+4 --' 12 years = 41600 × 2

+4 --- 16 years = 83200

19.A sum of Rs 280 deposited at CI doubles after 5 years after 15 years it amount to?

A. 2240 B. 2540 C. 2120 D 3110

Ans – A

5 years -- doubled = 560 × 2

+5 10 years = 1120 × 2

+5 15 years = 2240

20.Raj borrows Rs 15000 at 15% per annum for 3 years at SI and Kumar borrows the same amount for the same period at 10% pa compound annually. Who pays more interest by how much?

A. Raj – 1885 B. Raj - 1785

C. kumar – 1785 D. Kumar - 1885

Ans – B

Raj p = 15000 r = 15% n = 3 yrs

SI = pnr / 100

=15000 × 3 × 15 / 100 = 6750

SI = 6750

Kumar p = 15000 n = 3 r = 10%

3 3 1

×	×	×
1500	150	15
(10% of 15000)	(10% of 1500)	(10% of 150)

4500 + 450 + 15 = 4965

Difference = 6750 - 4965 = 1785

So raj pays more = ₹ 1785

21.Find the difference inCI & SI

(i) P = Rs 4000 r = 5% pa n = 2 yrs

(ii) P = Rs 8000 r = 4% pa n = 3 yrs

A. 8, 39.81 B. 12.5, 81.39 C. 10, 38.91 D 12, 35.81

Ans – C

i) CI –SI = $pr^2/100^2$ = 4000 × 5/100×5/100

= 10

$$CI - SI = p\left(\frac{r}{100}\right)2\left(3+\frac{r}{100}\right)$$

$$8000\left(\frac{4}{100}\times\frac{4}{100}\right)\left(3+\frac{4}{100}\right)$$

= 38.91

22.Thara invested Rs 120000 in a business she wanted to pay an interest at 5% per annum compounded annually .find

(i) The amount standing to her credit

(ii)The interest for 3rd year

A. Rs 123200, Rs 128125 B. Rs 3,12300, Rs 318915

C. Rs 1,32,300 , Rs 138915 D. Rs 223418, Rs 208735

Ans – C

i) $\boldsymbol{A = P\left(1+\frac{R}{100}\right)^n}$

$$= 120000\left(1+\frac{5}{100}\right)^2$$

$= 120000\ X\ \frac{21}{20}\ X\ \frac{21}{20}$

A = Rs 1,32, 300

ii) P = 132300

$CA = P\left(1 + \frac{R}{100}\right)^n = 132300 \times (1+\frac{5}{100})$

= 138915

23. The difference between CI and SI for 2 years on a sum of money sent at 12% pa Rs 259.2 find the sum of money

A. 15000 B. 20000 C. 16000 D 18000

Ans – D

Difference = > p (r^2/ 100^2)

259.2 = > P × 12/100 ×12/100

P = 259.2 × 100×100 / 12×12

P = 18000

24. In how many years will Rs 27000 become Rs 29791 at 13 1/3% pa when interest is compounded quarterly?

A. 1 ½ B. ¾ C. 4/3 D ½

Ans – B

$$A = P\left[1 + \frac{1}{4}\left(\frac{r}{100}\right)\right]^{4n}$$

$$29791 = 27000\left[1 + \frac{1}{4}\left(\frac{40/3}{100}\right)\right]^{4n}$$

$$\frac{29791}{27000} = \left[1 + \frac{40}{12 \times 100}\right]^{4n} = \left[1 + \frac{1}{30}\right]^{4n}$$

$$\left(\frac{31}{30}\right)^3 = P\left[\frac{31}{30}\right]^{4n}$$

3 = 4n

N = ¾ yrs

25. Find the rate of compound interest at which a principals becomes 1.96 times itself in 3 years

A. 20% B. 30% C. 35% D. 40%

Ans – D

N = 2 years a = 1.96 p

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

$$1.96\,p = P\left(1 + \frac{r}{100}\right)^n$$

$$1.96\,p = P\left(\frac{100+r}{100}\right)^2 = \frac{196}{100} = \left(\frac{100+r}{100}\right)^2$$

$$\left(\frac{4}{10}\right)^2 = \left(\frac{100+r}{100}\right)^2$$

140 – 100 = r

R = 40%

26. The population of Chennai city dcreases at a rate of 5% pa. if the population was 400000 at the end of the year 2017 then what will be its population after 4 years

A. 325802.5 B. 80000 C. 85873 D 253208.5

Ans – A

$$A = P\left(1 - \frac{r}{100}\right)^n$$

$$A = 400000\left(1 - \frac{5}{100}\right)^4$$

$$A = 400000\left(\frac{75}{100}\right)^4$$

$$= 400000 \times 19/\ 20{\times}19/20 \times 19/20$$

$$A = 325802.5$$

27. In Mudumalai Tiger resource the population of Kai investors the rate of 5% if the present population if high is an 19 then what will be each population before 3 years

A. 949 B. 165 C. 565 D 727

Ans – A

$$= \frac{p}{\left[1+\frac{R}{100}\right]n} = \frac{1098}{\left(1+\frac{5}{100}\right)2}$$

$$\frac{1098}{\left(\frac{105}{100}\right)2} = 1098 \times \left(\frac{100}{105}\right)3$$

$$= 1098 \times \frac{20}{21} \times \frac{20}{21} \times \frac{20}{21}$$

$$= 949$$

28. A sum of Rs 100000 was deposited in a bank for a period of 27 months at the rate of 20% pa. On compounded interest what will be the amount received totally?

A. 2,16000 B. 1,51, 200 C. 4,50,000 D 5,50,000

Ans – B

$$A = P\left(1+\frac{r}{100}\right)^n\left(1+\frac{r/4}{100}\right)^{4n}$$

27 months

1 year 1year 3 months

20% 20% $\frac{20}{4} = 5\%$

$$100000 \times \frac{20}{100} = 20000$$

$$120000 \times \frac{20}{100} = 24000$$

$$144000 \times \frac{5}{100} = 7200$$

Total Interest = 51200

Total Amount = 100000 + 51200

= 151200

29. **A sum of money invested at compound interest amounts to Rs 2000in 3 years and Rs 2420 in 5 years find rate of interest?**

A. 8% B. 11% C. 10% D 9%

Ans – C

$$2000 = p\left(1+\frac{r}{100}\right)^3 \rightarrow (1)$$

$$2420 = p\left(1+\frac{r}{100}\right)^5 \rightarrow (2)$$

$$\frac{2}{1} = \frac{p\left(1+\frac{r}{100}\right)^5}{p\left(1+\frac{r}{100}\right)^3} = \frac{2420}{2000}$$

$$\left(1+\frac{r}{100}\right)^2 = \frac{2420}{2000}$$

$$\left(1+\frac{r}{100}\right)^2 = \frac{121}{100}$$

$$1+\frac{R}{100} = \frac{121}{100}$$

$$100+\frac{R}{100} = \frac{11}{10}$$

$$100 + R = 100 \times \frac{11}{10} = 110$$

R = 110 – 100

R = 10%

30.Find the principal if the difference between CI & SI on it at a 15% pa for 3 years is Rs 1275.75.

A. 17000 B. 16000 C. 18000 D 19000

Ans – C

$$p = \left(\frac{r^2}{100}\right)\left(\frac{r+300}{100}\right) = CI - SI$$

$$p\left(\frac{15}{100} \times \frac{15}{100}\right)\left(\frac{15+300}{100}\right) = 1275.75$$

$$p\left(\frac{3 \times 3}{20 \times 20}\right) = \frac{1275.75 \times 100}{315}$$

$$p\left(\frac{9}{400}\right) = \frac{1275.75}{315}$$

P=18000

TNPSC PREVIOUS YEAR QUESTION PAPER

1. Find the simple interest on Rs. 87 per annum for 1 year 6 months.

A) Rs .730 B) Rs. 800 C) Rs. 840 D) Rs. 715

Ans – C

2. Find simple interest for Rs. 6,754 to 219 days at 10% per annum.

A) Rs .405 B) Rs. 155 C) Rs. 450 D) Rs . 350

Ans-A

3. Find simple interest on Rs. 10,950 for 42 days at 10 % per annum.

A) Rs .116 B) Rs. 74 C) Rs. 126 D) Rs . 108

Ans-C

4. The principal amount triples itself at 8% per annum over a certain time. Find the number of years.

A) 20 years B) 25 years C) 30 years D) 35 years

Ans-B

5. A sum of money triples itself at 8 8% per annum over a certain time. The time taken is.

A) 20 years B) 25 years C) 30 years D) 35 years

Ans-B

6. A sum of money triples itself at 8 8% per annum over a certain time. find the number of years.

A) 8 years B) 15 years C) 23 years D) 25 years

Ans-D

7. At what rate of simple interest Rs.4000 will amount to Rs.5000 in 4 years.

A) 6 ¼% B) 6% C) 5 1/2% D) 6 ¾%

Ans- A

8. Find the rate of interest per year of the following details. Amount Rs. 2000 year=2, year and simple interest Rs.120.

A) 3% B) 2% C) 1% D) 5%

Ans-A

9. The rate of percent per annum what a principal of Rs.7000 earn simple interest Rs. 1680 in 16 month is,

A) 8% B) 18% C) 16% D) 15%

Ans-B

10.Find the principal that will yield a simple interest Rs. 300 in 3 years at 2% rate of interest per annum.

A) Rs.5000 B) Rs.3000 C) Rs.1000 D) Rs.2000

Ans-A

11.The simple interest on a certain sum of 3 years at 14% for annum is Rs. 235.20. The sum is

A) Rs.480 B) Rs.560 C) Rs.650 D) Rs.720

Ans-B

12.Find the simple interest on Rs. 1000 from April 9, 2010 to June 9, 2010 at 7 1/2% per annum.

A) Rs.12.74 B) Rs.12.50 C) Rs.13.07 D) Rs.13.50

Ans-A

13.Rahul Borrowed Rs. 4,000 on 7th June 2006, and Returned it on 19th August 2006 , find amount he paid, if the interest is calculated 5% per annum.

A) Rs.4000 B) Rs.3500 C) Rs.4200 D) Rs.4040

Ans – D

14.What will be simple interest earned on an amount of Rs. 16,800 in 9 month at the rate of 6 1/4 per annum?

A) Rs.697.75 B) Rs.787.50 C) Rs.567. 30 D) Rs.897.60

Ans-B

15.The simple interest on rupees 10 for 4 months at the rate of 3 Paisa per Rupee per month is,

A) Rs.2.10 B) Rs.0.80 C) Rs.1.20 D) Rs.1.50

Ans-C

16. At what rate of simple interest a certain sum will be double in 15 year?

A) 6 1/3% B) 5 1/3% C) 5 2/3% D) 6 2/3%

Ans-D

17. At what rate of interest a sum of money doubles itself in 10 years in simple interest?

A) 10% B) 20% C) 50% D) 25%

Ans-A

18. A sum of money quadruple itself in 24 years under simple interest scheme then rate of interest is.

A) 12.3% B) 12.5% C) 10% D) 22%

Ans-B

19. A sum of money rises 4 times itself at 15% per annum over a certain time find the number of year.

A) 10 years B) 15 years C) 20 years D) 25 years

Ans-C

20. Find the rate of percent at which year sum of money becomes 7/6 times in 3 years,

A) 12% B) 5 5/9% C) 6 5/9% D) 24%

Ans- B

21. A person gets Rs. 50, 000 as a loan with interest rate 4% per annum from a bank. If the interest is calculated year wise, then the compound interest after to year is,

A) Rs.4000 B) Rs.2000 C) Rs.2080 D) Rs.4080

Ans- D

22.Find the compound interest on Rs. 50,000 at 16% per annum for 2 years compound continuously,

A) Rs.17,280 B) Rs.16,280 C) Rs.15,280 D) Rs.14,280

Ans-A

23.Calculate the compound interest on Rs. 9000 in 2 years when the rate of interest for successive year are 10% and 12% respectively.

A) Rs.1,188 B) Rs.2,088 C) Rs.4,396 D) Rs.2,596

Ans-B

24.Alex invested and amount of Rs. 8000 in a fixed deposit scheme for 2 years compound interest rate 5% is per annum how much amount will Alex gat on maturity of this fixed deposit?

A) Rs.8,000 B) Rs.8,620 C) Rs.8,820 D) Rs.8,840

Ans-C

25.If interest is compound every 6 month a principal of Rs.8000 at 10% rate of interest will amount to--------- at the centre of 18 month.

A) Rs.9,000 B) Rs.9,156 C) Rs.9,261 D) Rs.9,282

Ans-C

26.26) The number of complete year in which year sum of money put out at 20% compound interest will be more than double is,

A) 3 B) 4 C) 5 D) 6

Ans-B

27.Find this compound interest on Rs 1000 for 10 years at 4% interest is calculated quarterly,

A) 486 B) 479 C) 400 D) 500

Ans-A

28.At what rate of compound interest per annum will sum of Rs.1200 become Rs.1348.32 to into two years.

A) 7.5% B) 6.5% C) 6% D) 5%

Ans-C

29.At what rate percent compound interest per annum will Rs.640 amount to Rs.774.40 in 2years,

A) 5% B) 6% C) 7% D) 10%

Ans:D

30.At what rate percent of compound interest per annum will Rs. 640 amount to Rs. 774.40 into years when interest is being compounded annually,

A) 5% B) 6% C) 7% D) 10%

Ans: D

31.At what rate of interest compound interest per annum will Rs. 640 amount Rs.774.40 in 2 years

A) 8% B) 9% C) 10% D) 11%

Ans:C

32.At what rate per Annum will Rs.640 amount to Rs. 774.40 in 2 years win interest is being compounded annually?

A) 10% B) 15% C) 20% D) 25%

Ans:A

33.The compound interest on Rs. 24000 compounded of half yearly for 1 1/2 years at this rate of 10% per annum.

A) Rs.3,483 B) Rs.3,783 C) Rs.Rs.3,873 D) Rs.3,973

Ans:B

34.The C.I on Rs. 24000 at 10% per annum for 1 1/2 years where interest being compounded half yearly is_____

A) Rs.3,783 B) Rs.3,873 C) Rs.3,373 D) Rs.3,873

Ans.A

35.Find the compound interest on rupees 5000 at 15% per annum for 2 years 4 months compounded annually,

A) Rs.3,110 B) Rs.3,109 C) Rs.3,106 D) Rs.3,108

Ans: B

36.Find the compound interest on Rs16000 at 20% per annum for 9 months compounded quarterly

A) Rs.18,522 B) Rs.17,610 C) Rs.16,800 D) Rs.3,108

Ans.B