# Simple Interest and Compound Interest for Railway Exams



## Simple Interest and Compound Interest for Railway NTPC Stage-I Exams

**1) Find the Compound interest on a sum of Rs. 1000 for 2.5 years at the rate of 10% per annum?**

a) 270.5

b) 300

c) 270

d) 250

**2) Find the compound interest on the sum of Rs. 1200 for 2 years at the rate of 8.5% per annum?**

a) 200

b) 208.33

c) 308.33

d) None of these

**3) Find the Principle if the compound interest earned in 2 years at the rate of 8% per annum is Rs 1.664?**

a) 20

b) 10

c) 30

d) 100

**4) If the compound interest earned at the rate of 13% per annum for 2 years is Rs 27.69% then find the Principle?**

a) 100

b) 10

c) 1000

d) 200

**5) How much will a sum of 2500, invested at compound interest, amount to in 1 year at 4% interest rate, interest compounded half-yearly**

a) 2610

b) 2601

c) 2656

d) 2600

**6) If the simple interest on a sum at the rate of 8% for 3.5 years per annum is 1680 then find the sum?**

a) 470.4

b) 4800

c) 6000

d) 4040

**7) If the Simple interest on a sum at the rate of 4% for 2.5 years is Rs. 80 then find the Amount?**

a) 808

b) 800

c) 990

d) 880

**8) If the same Principle was invested in two schemes A and B for the same term at the rate of 8% while interest in A was Simple interest and in B it was Compound interest then find the ratio between their interests?**

a) 1 : 1

b) 2 : 3

c) 3 : 2

d) Cannot be determined

**9) If the Compound interest on a sum is Rs.840 at the rate of 10% for two years then find the simple interest on same sum for same parameters?**

a) 800

b) 750

c) 1200

d) 1500

**10) Find the rate per annum when the interest for 4 years is 4/7 times of the sum invested initially?**

a) 3%

b) 2.04%

c) 3.50%

d) 4.50%

**11) Find the time taken by the sum to becomes 8 times of itself when rate being 4% per annum?**

a) 175 years

b) 180 years

c) 190 years

d) 100 years

**12) Find the rate per annum if the sum of 16 units grows to 30 units in 4 years at simple interest?**

a) 21.875%

b) 33.5%

c) 25.5%

d) None of these

**13) Find the amount when simple interest earned on a sum for 2 years at the rate of 5% per annum is Rs. 140?**

a) 1546

b) 1450

c) 1500

d) 1540

**14) A sum of money lent out at the simple interest amount to Rs. 720 after 2 years and to Rs. 1020 after a further period of 5 years. The sum is ;**

a) 520

b) 500

c) 420

d) 320

# Simple Interest and Compound Interest for Railway Exams

**15) In how many years Rs. 150 will produce the same interest @ 8% as Rs. 800 produce in 3 years @ 4.5%?**

a) 9 years

b) 10 years

c) 5 years

d) 6 years

**16) In how much time would the simple interest on a certain sum be 0.125 times the principle at 10% per annum?**

a) 2.5 years

b) 1.5 years

c) 2 years

d) 1.25 years

**17) If the simple interest is 6/7 times of the principle for 3 years then find the rate of interest per annum?**

a) 25.87%

b) 28.57%

c) 32.57%

d) 38.57%

**18) The rate at which a sum becomes four times of itself in 10 years at simple interest will be;**

a) 15%

b) 25%

c) 30%

d) 35%

**19) How long will it take a sum of money invested at 6% to grow its value by 48%?**

a) 4 years

b) 6 years

c) 5 years

d) 8 years

**20) If a sum of money at simple interest doubles in 5 years , it will becomes 6 times in ;**

a) 20 years

b) 25 years

c) 15 years

d) 30 years

**21) At what rate of simple interest will a money double itself in 10 years?**

a) 20%

b) 10%

c) 5%

d) 15%

**22) If the invested sum and time in scheme A and B is same, and rate being 4% and 5% per annum then find the ratio between the simple interest earned?**

a) 4 : 5

b) 5 : 4

c) 2 : 3

d) 16 : 25

**23) At what rate percent per annum will a sum of money double in 16 years?**

a) 6.25%

b) 12.5%

c) 8.5%

d) 4.5%

**24) The simple interest on the sum is 4/9 times of the principle, find the rate per annum if rate and time both are numerically equal?**

a) 9.9

b) 3.5

c) 6.6

d) 13.13

**25) Find the simple interest on Rs. 68,000 at 16(2/3)% per annum for 6 months?**

a) 5666.67

b) 5888.7

c) 5662

d) None of these

**26) A sum amounts to Rs. 2502.50 at 13(1/2)% per annum for simple interest in 4 years then find the sum invested?**

a) 1600

b) 1500

c) 1625

d) 1565

**27) A sum was putted at the rate of x% for 2 years earns some simple interest had it putted for (x + 3)% for 2 years then the interest would be Rs. 120 more then find the sum?**

a) 200

b) 2000

c) 20000

d) 1000

**28) A sum was putted at the rate of x% for 3 years earns some simple interest had it putted for (x + 3)% for 3 years then the interest would be Rs. 180 more then find the sum?**

a) 1000

b) 2000

c) 1500

d) None of these

**29) A sum was putted at the rate of x % for 3.5 years earns some simple interest had it putted for (x + 2)% for 3.5 years then the interest would be Rs. 140 more then find the sum?**

a) 2100

b) 1500

c) 1400

d) 2000

**30) A sum was putted at the rate of (x + 1.5)% for 2 years earns some simple interest had it putted for x% for 2 years then the interest would be Rs. 60 less then find the sum?**

a) 1500

b) 1000

c) 2000

d) 2500

**31) A sum was putted at the rate of (2x + 1.5)% for 2 years earns some simple interest had it putted for 2x% for 2 years then the interest would be Rs. 30 less then find the initial amount?**

a) Rs. 500

b) Rs. 1000

c) Rs. 375

d) Cannot be determined

**32) The compound interest on Rs. 30,000 @ 7% per annum is Rs. 4347.The term in years will be ;**

a) 1 years

b) 2 years

c) 3 years

d) 4 years

**33) What will be the difference in the Ci and Si on the sum of rupees 10,500 at the rate of 3% for 2 years?**

a) 9.45/-

b) 0

c) 9 /-

d) 10 /-

**34) Find the compound interest on Rs. 15,625 for 6 months at 16% per annum compounded quarterly?**

a) 1575

b) 1275

c) 1475

d) 1375

**35) If the compound interest on a sum for 2 years at 12.5% per annum is Rs. 510 , the simple interest on the same sum at the same rate for the same period of time is ;**

a) 520

b) 420

c) 480

d) 120

**36) 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 @ 10% per annum. The sum placed on the simple interest is;**

a) 1750

b) 2750

c) 2875

d) 2975

**37) There is 30% increase in the value of sum invested at 3% per annum at simple interest. Find the simple interest earned on 15,000 for the same time at 2% per annum?**

a) 4000

b) 5000

c) 3000

d) None of these

**38) Find the simple interest on Rs. 20480 at 6.25% per annum for 2.5 years?**

a) 3800

b) 6400

c) 1600

d) 3200

**39) Find the difference between Ci & Si on the sum of Rs. 5000 for 2 years at 10% per annum?**

a) Rs. 5

b) Rs. 500

c) Rs 0

d) Rs. 50

**40) Find the difference between Ci & Si on the sum of Rs. 15000 for 2.5 years at 10% per annum?**

a) 307.5

b) 407.5

c) 807.5

d) None of these

**41) Find the Compound interest on the sum of Rs. 6000 for 2(2/3) years at 9% per annum?**

a) 1556.31

b) 1500.31

c) 1456.31

d) 1356.31

**42) Find the Compound interest on the sum of Rs. 800 for 1(2/5) years at 10% per annum?**

a) Rs. 135.2

b) Rs. 115.2

c) Rs. 145.2

d) Rs. 165.2

**43) A sum of money becomes 1296 in 2 years and 1600 in 4 years then find the Effective rate for 2 years?**

a) 10%

b) 9(1/11)%

c) 11(1/9)%

d) 12%

**44) A sum of money becomes 441 in 2 years and 576 in 4 years then find the Effective rate of 2 years?**

a) 19.23%

b) 25%

c) 17.31%

d) Cannot be determined

**45) A sum of money becomes 343 in 2 years and 729 in 5 years then find the Effective rate of 3 years?**

a) 14.91%

b) 14.27%

c) 28.57%

d) Cannot be determined

# Simple Interest and Compound Interest for Railway Exams

**46) A sum of money becomes 216 in 2 years and 729 in 5 years then find the Effective rate of 3 years?**

a) 50%

b) 25%

c) 37.5%

d) 26.01%

**47) A man invested in two schemes A and B , the sum invested is same and rate being 5% and 7% for 7 years and 9 years respectively. Find the ratio of their simple interest?**

a) 9 : 5

b) 5 : 9

c) 5 : 7

d) 5 : 4

**48) If the ratio of Si to Ci is 34 : 37 while all the parameters being same then find the rate of interest per annum?**

a) 17.64%

b) 18.75%

c) 19.75%

d) Cannot be determined

**49) If the ratio of Si to Ci is 300 : 321 while all the parameters being same then find the rate of interest for per annum?**

a) 14.5%

b) 21%

c) 7%

d) 14%

**50) Find the Si for the same sum and rate but for three years if the Ci on a sum for 2 years at the rate of 11(1/9)% is 95 rupees?**

a) 135/-

b) 235/-

c) 335/-

d) 435/-

## ANSWERS

**1) Answer: A**

**Solution:**

Principle = 1000

Rate = 10%

Time = 2.5 years

Let principle = 1000

| Interest on first year | Interest on second year | Interest on third year |
|---|---|---|
| 100 | 100 | 100 |
| | 10 | 10 |
| | | 10 |
| | | 1 |

Since we have T = 2.5 years.

So we will take half interest of 3$^{rd}$ year.

Compound Interest = 100 + 110 + 60.5

Compound Interest = 270.5

**2) Answer: B**

**Solution:**

8.5% = 1/12

Let Principle = 144

$1^{st}$ year interest $2^{nd}$ year interest

12 12

1

Compound Interest = 25 units

Principle = 144 units = 1200

1 unit = 25/3 rupees

Compound Interest = 625/3

Compound Interest = 208.33

**3) Answer: B**

**Solution:**

Principle = 100%

Rate = 8%

Time = 2 years

Compound Interest = Rs 1.664

Effective rate for 2 years = 8 + 8 + 8×8/100

Effective rate = 16.64%

16.64% = 1.664

1% = 0.1 rupees

100% = 10

**4) Answer: A**

**Solution:**

Principle = 100%

Rate = 13%

Time = 2 years

Compound Interest = Rs 27.69%

Effective rate for 2 years = 13 + 13 + 13 × 13/100

Effective rate = 27.69%

27.69% = 27.69%

1% = 1 rupees

100% = 100

**5) Answer: B**

**Solution:**

P = 2500

R = 4% per annum=2% per half-yearly

T =1 year= 2 half year

| Interest on first year | Interest in second year |
|---|---|
| 50 | 50 |
| | 1 |
| | |
| | |

Compound Interest = 50+50+1=101

Amount=P+CI=2500+101=2601

**6) Answer: C**

**Solution:**

S.I= 1680

Rate = 8%

Time = 3.5 years

Simple Interest = (P×R×T)/100

1680= (P×8×3.5)/100

P = 6000

**7) Answer: D**

**Solution:**

Amount =?

Principle =?

Simple Interest = 80

Rate = 4%

Time = 2.5 years

Simple Interest = (P×R×T)/100

80 = (p×4×2.5)/100

P = 800

A = P + SI

Amount = 800 + 80 = 880

**8) Answer: D**

**Solution:**

| | A | B |
|---|---|---|
| P | p | p |
| Rate | 8 | 8 |
| Time | T | T |
| Interest | CI | SI |

This question cannot be solved because time is not given in the question because the interest will be varied with time.

**9) Answer: A**

**Solution:** Let P = 100% R = 10% T = 2 years

Effective rate = 10 + 10 + 10 × 10/100

Effective rate = 21%

21% = Rs. 840

1% = Rs. 40

100% = 4000

Simple Interest = (P × R × T)/100

Simple Interest = (4000 × 10 × 2)/100

Si = 800/-

**10) Answer: B**

**Solution:** Time = 4 years Let P = 7 units
Si = 1 unit/year

Si =(P × R × T)/100

1 =(7 × R × 7)/100

Rate = 2.04%

**11) Answer: A**

**Solution:** Time =? Rate = 4% Let P = 1 units A = 8 units.

Simple Interest = 7 units

Simple Interest = (P×R×T)/100

7 = (1×4×T)/100

T = 175 years

**12) Answer: A**

**Solution:** Let p = 16 units T = 4 years A = 30 units

Si = 14 units

Simple Interest = (P×R×T)/100

14 = (16 × R × 4)/100

Rate = 21.875%

**13) Answer: D**

**Solution:**

A =? Rate = 5% T = 2 years Si = 140

Simple Interest = (P × R × T)/100

140 = (P × 5 × 2)/100

P = 1400

A = P + Si

A = 1400 + 140

A = 1540

**14) Answer: A**

**Solution:**

| P | $(Si)_2$ | $(Si)_5$ |
|---|---|---|
| P | 720 | 1020 |

$(Si)_3$ = 1020 - 720

$(Si)_3$ = 300

Simple Interest = 300/3 = Rs. 100 per year

A = 720

Si = 200

P = 520

**15) Answer: A**
**Solution:**

P = 150 Rate = 8% T =?

Simple Interest = (P × R × T)/100

Simple Interest = (150 × 8 × T)/100……..(1)

Now, P = 800/- Rate = 4.5% T = 3

Simple Interest = (800 × 4.5 × 3)/100

Simple Interest = 108

From eq (1)

(108 × 100)/ (150 × 8) = T

T = 9 years

**16) Answer: D**

**Solution:** 0.125 = 1/8 units

Let P = 8 unit and Si = 1 unit

1 = (10 × 8 × T)/100

T = 1.25 years

**17) Answer: B**

**Solution:** Let P = 7 unit and Si = 6 unit

Time = 3 years

6 =(7 × 3 × r)/100

Rate = 28.57%

**18) Answer: C**

**Solution:** T = 10 years

Let p = 1 unit

A = 4 units

Si = 3 units

Si =(P × R × T)/100

3 =(1 × R × 10)/100

Rate = 30%

**19) Answer: D**

**Solution:** Rate = 6%

Let p = 100%

Si = 48%

48 =(100 × 6 × T)/100

Time = 8 years

**20) Answer: B**

**Solution:** Let p = 1 unit

A = 2 units

Si = 1 units

1 =(1 × 5 × R)/100

Rate = 20%

Now, to make it 6 times,

P = 1 unit

Si = 5 units

Rate = 20%

5 = (1 × 20 × t)/ 100

Time = 25 years.

**21) Answer: B**

**Solution:** Let p = 1 unit

A = 2 units

Si = 1 unit

Si = (P × R × T)/100

1 =(1 × R × 10)/ 100

Rate = 10%

**22) Answer: A**

**Solution:**

| | A | B |
|---|---|---|
| P | p | p |
| Rate | 4 | 5 |
| Time | T | T |
| Interest | Si | Si |

Interest ratio of A : B = 4 : 5

**23) Answer: A**

**Solution:** Let p = 1 unit

A = 2 units

Si = 1 unit

Si = (P × R × T)/100

1 =(1 × R × 16)/ 100

Rate = 6.25%

**24) Answer: C**

**Solution:** Let p = 9 unit

A = 13 units

Si = 4 unit

Si = (P × R × T)/100

4 =(9 × R × R)/ 100

Rate = 6.6%

**25) Answer: A**

**Solution:**

p = 68,000/- R = 16(2/3)% T = 6 months

Si =(P × R × T)/100

SI =(68000 × 1 × 6 )/(6 × 12 )

Si = 5666.67/-

**26) Answer: C**

**Solution:**

Let Principle = 100%

Si = 13.5% × 4

Si = 54% of principle

Amount = Principle + Simple Interest

Amount = 154%

154% = 2502.50

100% = Rs. 1625

**27) Answer: B**

**Solution:**

Let Principle = 100%

Extra rate = 3%

Extra rate for 2 years = 3 × 2 = 6%

6% = Rs. 120

1% = Rs. 20

100% = 2000

**28) Answer: B**

**Solution:**

Let Principle = 100%

Extra rate = 3%

Extra rate for 3 years = 3 × 3 = 9%

9% = Rs. 180

1% = Rs. 20

100% = 2000

**29) Answer: D**

**Solution:**

Let Principle = 100%

Extra rate = 2%

Extra rate for 3.5 years = 3.5 × 2 = 7%

7% = Rs. 140

1% = Rs. 20

100% = 2000

**30) Answer: C**

**Solution:**

Let Principle = 100%

Extra rate = 1.5%

Extra rate for 2 years = 1.5 × 2 = 3%

3% = Rs. 60

1% = Rs. 20

100% = 2000

# Simple Interest and Compound Interest for Railway Exams

**31) Answer: B**

**Solution:** Let Principle = 100%

Extra rate = 1.5%

Extra rate for 2 years = 1.5 × 2 = 3%

3% = Rs. 30

1% = Rs. 10

100% = 1000

**32) Answer: B**

**Solution:** P = 30,000/- Rate = 7% Ci = 4347/-

Effective Rate = (4347/30,000)×100

Effective rate = 14.49%

We know that effective rate of 7% for time = 2 years is 14.49%

Time = 2 years.

**33) Answer: A**

**Solution:**

P = 10,500 R = 3% T = 2 years

Si = (P × R × T)/100

Si = 630/-

Effective rate = 3 + 3 + 3 × 3/100

Effective rate = 6.09%

Ci = 6.09% of 10,500

Ci = 639.45

Difference = 9.45

**34) Answer: B**

**Solution:**

P = 15,625 R = 4% T = 2 years

4% = 1/25

Let principle = 625 units

625

| 1st year | 2nd year |
|---|---|
| 25 | 25 |
| | 1 |

Ci = 51 units

625 units = Rs 15,625

1 unit = Rs. 25

Ci = 51 × 25

Ci = Rs. 1275

**35) Answer: C**

**Solution:** Rate = 12.5% = 1/8

| P | A |
|---|---|
| 8 | 9 |
| 8 | 9 |
| 64 | 81 |

Compound Interest = A - P

Compound Interest = 17 units

17 units = 510

1 unit = 30

P = 64 units

P = 64 × 30

P = 1920

Simple Interest = (1920 × 12.5 × 2)/100

Simple Interest = Rs. 480

**36) Answer: A**

**Solution:**

P = Rs.4000 T = 2 years R = 10% per annum

Effective rate = 21%

Compound Interest = 21% of 4000

Compound Interest = Rs. 840

Simple Interest = 0.5 × Compound Interest

Simple Interest = Rs. 420

Simple Interest = (P × R × T)/ 100

420 = (P × 3 × 8 )/100

P = Rs. 1750

**37) Answer: C**

**Solution:**

Let P = 100% R = 3 % Si = 30% t =?

Simple Interest = (P × R × T)/ 100

30 = (100 × 3 × T)/100

Time = 10 years

Now, P = 15,000/- R = 2% T = 10 years

Simple Interest = (P × R × T)/ 100

Simple Interest = (15000 × 2 × 10)/ 100

Simple Interest = 3000

**38) Answer: D**

**Solution:**

P = 20480 R = 6.25% T = 2.5 years

Simple Interest = (P × R × T)/ 100

Simple Interest = (20,480 × 6.25 × 2.5)/ 100

Simple Interest = 3200

**39) Answer: D**

**Solution:** P = 5000 R = 10% T = 2 years

Simple Interest = (P × R × T)/ 100

Simple Interest = (5000 × 10 × 2 )/100

Simple Interest = 1000

Effective rate = 10 + 10 + 10 × 10 / 100

Effective rate = 21%

Ci = 21% of 5000

Ci = 1050/-

Difference = Rs. 50

**40) Answer: A**

**Solution:** 15000

| 1st year | 2nd year | 3rd year |
|---|---|---|
| 1500 | 1500 | 1500 |
| | 150 | 150 |
| | | 150 |
| | | 15 |

Si for 2.5 years = 1st year + 2nd year + (3rd year/2)

Si for 2.5 years = 3750

Ci for 2.5 years = 1st year + 2nd year + (3rd year/2)

Ci for 2.5 years = 4057.5

Difference = Rs. 307.5

**41) Answer: A**

**Solution:**

P = 6000

Rate = 9%

Time = 2(2/3) years

Rates: 1st year - 9%

2nd year - 9%

3rd year - 6%

Effective rate = $R_1 + R_2 + R_3 + (R_1 \times R_2 \times R_3)/10000 + (R_1R_2 + R_3R_2 + R_3R_1)/100$ .....(1)

Effective rate = 25.93%

Ci = 25.93% of 6000

Ci = Rs. 1556.31

**42) Answer: B**

**Solution:**

P = 800/- Rate = 10% Time = 1(2/5) years

Interest Rates:

1st year - 10%

2nd year - 4%

Effective rate = $R_1 + R_2 + (R_1 \times R_2)/100$ .....(1)

Effective rate = 14.40%

Compound Interest = 14.40% of 800

Compound Interest = Rs. 115.2

**43) Answer: C**

**Solution:**

| P | $A_2$ | $A_4$ |
|---|---|---|
| P | $\sqrt{1296}$ | $\sqrt{1600}$ |
| | 36 | 40 |
| | 9 | 10 |

Compound Interest = 10 – 9 = 1 units

Rate = (1/9)×100

Rate = 11(1/9)%

**44) Answer: A**

**Solution:**

| P | $A_2$ | $A_4$ |
|---|---|---|
| P | $\sqrt{441}$ | $\sqrt{576}$ |
| | 21 | 26 |

Ci = 26 – 21 = 5 units

Rate = (5/26)×100

Rate = 19.23%

**45) Answer: C**

**Solution:**

| P | $A_2$ | $A_5$ |
|---|---|---|
| P | $\sqrt[3]{343}$ | $\sqrt[3]{729}$ |
| | 7 | 9 |

Compound Interest = 9 – 7 = 2 units

Rate = (2/7)×100

Rate = 28.57%

**46) Answer: A**

**Solution:**

| P | $A_2$ | $A_5$ |
|---|---|---|
| P | $\sqrt[3]{216}$ | $\sqrt[3]{729}$ |
| | 6 | 9 |

Compound Interest = 3 units

Rate = (3/6)×100

Effective Rate =50%

**47) Answer: B**

**Solution:**

| Scheme | A | B |
|---|---|---|
| P | p | p |
| Rate | 5 | 7 |
| Time | 7 | 9 |
| Interest | 35% | 63% |

A : B = 5 : 9

**48) Answer: A**

**Solution:**

Let Si = 34 units

Let Ci = 37 units

Both the interests are for 2 years.

Si for 1 year = 17 units

Exceeding part = 3 units (Compound interest)

Rate = (3/17)×100

Rate = 17.64%

**49) Answer: D**

**Solution:** Let Si = 300 units

Let Ci = 321 units

Both the interests are for 2 years.

Si for 1 year = 150 units

Exceeding part = 21 units (Compound interest )

Rate = (21/150)×100

Rate = 14%

**50) Answer: A**

**Solution:**

Ci = 95/- Rate = 11(1/9)%
Time = 2 years

11(1/9)% = 1/9

Let principle = $9^2$ = 81 units

81

$1^{st}$ year $2^{nd}$ year

9 9

1

Ci = 19 units

19 units = Rs 95

| | |
|---|---|
| 1 Unit = Rs. 5 | Si =(P × R × T)/ 100 |
| 81 unit = 405/- | Si =(405 × 1 × 3)/ (9) |
| Now , Simple interest | Si = 135/- |