

# BHARAT SCHOOL OF BANKING

## COMPOUND INTEREST

Q1. Sonika invested an amount of 5800 for 2 years. At what rate of compound interest will she get an amount of 594.5 at the end of two years?

- (a) 5 p.c.p.a.
- (b) 4 p.c.p.a.
- (c) 6 p.c.p.a.
- (d) 8 p.c.p.a.
- (e) None of these

Q2. The compound interest earned by Suresh on a certain amount at the end of two years at the rate of 8 p.c.p.a. was 1414.4. What was the total amount that Suresh got back at the end of two years in the form of principal plus interest earned?

- (a) 8500
- (b) 9914.4
- (c) 9014.4
- (d) 8914.4
- (e) None of these

Q3. What would be the compound interest accrued on an amount of 7400 @ 13.5 p.c.p.a. at the end of two years? (Rounded off to two digits after decimal)

- (a) 2136.87
- (b) 2306.81
- (c) 2032.18
- (d) 2132.87
- (e) None of these

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Q4. If the compound interest accrued on an amount of 14500 in two years is 4676.25, what is the rate of interest p.c.p.a?

- (a) 11
- (b) 9
- (c) 15
- (d) 18
- (e) None of these

Q5. What would be the compound interest accrued on an amount of 8000 at the rate of 15% per annum in three years?

- (a) 4283
- (b) 4051
- (c) 4167
- (d) 4325
- (e) None of these

Q6. What would be the compound interest accrued on an amount of 7850 at the rate of 14% per annum in two years?

- (a) 2351.86
- (b) 2880.37
- (c) 2518.22
- (d) 2290.23
- (e) 34013.95

Q7. What will be the compound interest accrued on an amount of 10000 @ 20 % per annum in two years if the interest is compounded half-yearly?

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- (a) 4400
- (b) 4600
- (c) 4641
- (d) 4680
- (e) None of these

Q8. What will be the difference between the simple interest and compound interest earned on a sum of 985.00 at the rate of 14% per annum at the end of two years?

- (a) 16.408
- (b) 14.214
- (c) 18.218
- (d) 17.405
- (e) None of these

Q9. The simple interest on a certain sum of money for 4 years at 4 per cent per annum exceeds the compound interest on the same sum for 3 years at 5 per cent annum by 57. Find the sum.

- (a) 24000
- (b) 25000
- (c) 26000
- (d) 3000
- (e) 40000

Q10. A sum of money at compound interest amounts in two years to 2809, and in three years to 2977.54. Find the original sum.

- (a) 2000

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(b) 2100

(c) 2200

(d) 2500

(e) 3000

S1. Ans.(a)

Sol.

$$594.5 = 5800 \left[ \left( 1 + \frac{r}{100} \right)^2 - 1 \right]$$

$$= \frac{594.5}{5800} = \left( 1 + \frac{r}{100} \right)^2 - 1$$

$$\Rightarrow \left( 1 + \frac{r}{100} \right)^2 = 1.1025$$

$$(100 + r)^2 = 11025$$

$$100 + r = 105$$

$$r = 5\%$$

S2. Ans.(b)

Sol. Suppose principle is P

$$\therefore \text{C.I.} = 1414.40 = P \left[ \left( 1 + \frac{8}{100} \right)^2 - 1 \right]$$

$$1414.40 = P(1.664 - 1)$$

$$P = \frac{1414.40}{0.664} = 8500$$

$$\text{So, Amount} = P + \text{CI} = 8500 + 1414.40 = 9914.40$$

S3. Ans.(d)

$$\text{Sol. CI} = 7400 \left[ \left( 1 + \frac{27}{200} \right)^2 - 1 \right]$$

$$= 7400 \left[ \left( \frac{227}{200} \right)^2 - 1 \right]$$

$$= 2132.87$$

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S4. Ans.(c)

$$\text{Sol. } 4676.25 = 14500 \left[ \left( 1 + \frac{r}{100} \right)^2 - 1 \right]$$

$$\Rightarrow \frac{4676.25}{14500} + 1 = \left( 1 + \frac{r}{100} \right)^2$$

$$\Rightarrow 1 + \frac{r}{100} = \sqrt{\frac{19176.25}{14500}} = \sqrt{1.3225}$$

$$1 + \frac{r}{100} = \frac{115}{100}$$

$$\Rightarrow r = 15\%$$

S5. Ans.(c)

$$\text{Sol. CI} = 8000 \left[ \left( 1 + \frac{15}{100} \right)^3 - 1 \right]$$

$$= 8000 \left[ \left( \frac{115}{100} \right)^3 - 1 \right] = 4167$$

S6. Ans.(a)

$$\text{Sol. CI} = 7850 \left[ \left( 1 + \frac{14}{100} \right)^2 - 1 \right] = 7850 \left[ \left( \frac{114}{100} \right)^2 - 1 \right]$$

$$= 7850(1.2996 - 1) = 2351.86$$

S7. Ans.(c)

Sol. R = 20% yearly = 10% half yearly

n = 2 years = 4 half-yearly

$$\text{CI} = 10000 \left[ \left( 1 + \frac{10}{100} \right)^4 - 1 \right] = 4641$$

S8. Ans.(e)

$$\text{Sol. Required difference} = P \left( \frac{R}{100} \right)^2 = 985 \left( \frac{14}{100} \right)^2$$

$$= 985 \times \frac{196}{10000} = 19.306$$

S9. Ans.(a)

Sol. Let the sum be x

$$\text{Then, } \frac{x \times 4 \times 4}{100} - 57 = x \left\{ \left( 1 + \frac{5}{100} \right)^3 - 1 \right\}$$

$$\frac{4x}{25} - 57 = x \left\{ \frac{1261}{8000} \right\}$$

$$x \left[ \frac{4}{25} - \frac{1261}{8000} \right] = 57$$

$$x = \frac{57 \times 8000}{19} = 24000$$

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S10. Ans.(d)

Sol. Difference in amounts =  $2977.54 - 2809 = 168.54$

Hence, rate of interest =  $\frac{168.54 \times 100}{2809} = 6\%$

Now, for the original sum,

$$2809 = x \left[ 1 + \frac{6}{100} \right]^2$$

$$2809 = x \left( \frac{53}{50} \right)^2 = 2500$$

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