

Banker's Discount Problems with Solutions Pdf

1. 1. The banker's discount on Rs.1600 at 15% per annum is the same as true discount on Rs.1680 for the same time and at the same rate. The time is
- 3 months
 - 4 months
 - 6 months
 - 8 months

Ans: B

$$\text{S.I. on ₹ 1600} = \text{T.D. on ₹ 1680.}$$

∴ ₹ 1600 is the P.W. of ₹ 1680, i.e.,

₹ 80 is S.I. on ₹ 1600 at 15%.

$$\therefore \text{Time} = \left(\frac{100 \times 80}{1600 \times 15} \right) \text{year} = \frac{1}{3} \text{year} = 4 \text{ months.}$$

2. The banker's discount on Rs. 2400 at 12% p.a. is the same as true discount on Rs. 2520 for the same time and at the same rate. The time is
- 4 months
 - 5 months
 - 6 months
 - 8 months

Ans: B

$$\text{S.I. on ₹ 2400} = \text{T.D. on ₹ 2520}$$

∴ ₹ 2400 is the P.W. of ₹ 2520

i.e. ₹ 120 is S.I. on ₹ 2400 at 12%

$$\therefore \text{Time} = \frac{100 \times 120}{2400 \times 12} = \frac{5}{12} \text{years} = \mathbf{5 \text{ months}}$$

3. The present worth of a certain bill due sometime hence is Rs. 800 and the true discount is Rs. 36. The banker's discount is
- Rs. 37

- b. Rs. 37.62
- c. Rs. 34.68
- d. Rs. 38.98

Ans: B

$$\text{B.G.} = \frac{(\text{T.D.})^2}{\text{P.W.}} = ₹ \left(\frac{36 \times 36}{800} \right) = ₹ 1.62.$$

$$\therefore \text{B.D.} = (\text{T.D.} + \text{B.G.}) = ₹ (36 + 1.62) = ₹ 37.62.$$

4. What rate percent does a man get for his money when in discounting a bill due 10 months hence, he deducts 10% of the amount of the bill?

Let, amount of the bill = ₹ 100. Money deducted = ₹ 10.

Money received by the holder of the bill = ₹ (100 - 10) = ₹ 90.

\therefore S.I. on ₹ 90 for 10 months = ₹ 10.

$$\therefore \text{Rate} = \left(\frac{100 \times 10}{90 \times \frac{10}{12}} \right) \% = 13\frac{1}{3}\%.$$

5. The banker's discount on Rs.1650 due a certain time hence is Rs.165. Find the true discount and the banker's gain.

- a. 130
- b. 140
- c. 150
- d. 160

Ans: C

$$\text{Sum} = \frac{\text{B.D.} \times \text{T.D.}}{\text{B.D.} - \text{T.D.}} = \frac{\text{B.D.} \times \text{T.D.}}{\text{B.G.}}$$

$$\therefore \frac{\text{T.D.}}{\text{B.G.}} = \frac{\text{Sum}}{\text{B.D.}} = \frac{1650}{165} = \frac{10}{1}.$$

Thus, if B.G. is Re 1, T.D. = ₹ 10.

$$\text{If B.D. is ₹ 11, T.D.} = ₹ 10. \text{ If B.D. is ₹ 165, T.D.} = ₹ \left(\frac{10}{11} \times 165 \right) = ₹ 150.$$

6. The present worth of a certain sum due sometimes hence is Rs.1700 and the true discount is Rs.170. The banker's gain is

- a. Rs. 20
- b. Rs. 18
- c. Rs. 17
- d. Rs. 16

Ans: C

Given P.W. = ₹ 1700; T.D. = ₹ 170

$$\therefore \text{B.G.} = \frac{(\text{T.D.})^2}{\text{P.W.}} = \frac{(170)^2}{1700} = ₹ 17$$

7. The banker's discount on a certain sum due to 2 years hence is $\frac{11}{10}$ of the true discount. The rate percent is

- a. 11%
- b. 10%
- c. 5%
- d. 5.5%

Ans: C

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Let T.D. be ₹ 1. Then, B.D. = ₹ $\frac{11}{10}$ = ₹ 1.10.

$$\therefore \text{Sum} = ₹ \left(\frac{1.10 \times 1}{1.10 - 1} \right) = ₹ \left(\frac{110}{10} \right) = ₹ 11.$$

\therefore S.I. on ₹ 11 for 2 years is ₹ 1.10.

$$\therefore \text{Rate} = \left(\frac{100 \times 1.10}{11 \times 2} \right) \% = 5\%.$$

8. The present worth of a bill due sometime hence is Rs. 1100 and the true discount on the bill is Rs. 110. Find the banker's discount and the banker's gain.

- a. 2 months
- b. 3 months
- c. 4 months

d. 5 months

Ans: C

S.I. on ₹ 1800 = T.D. on ₹ 1872.

∴ P.W. of ₹ 1872 is ₹ 1800.

∴ ₹ 72 is S.I. on ₹ 1800 at 12%.

∴ Time = $\left(\frac{100 \times 72}{12 \times 1800}\right)$ year = $\frac{1}{3}$ year = 4 months.

9. The banker's discount and the true discount on a sum of money due 8 months hence are Rs. 120 and Rs. 110 respectively. Find the sum and the rate percent.

Sol. Sum = $\left(\frac{\text{B.D.} \times \text{T.D.}}{\text{B.D.} - \text{T.D.}}\right) = ₹ \left(\frac{120 \times 110}{120 - 110}\right) = ₹ 1320.$

Since B.D. is S.I. on sum due, so S.I. on ₹ 1320 for 8 months is ₹ 120.

∴ Rate = $\left(\frac{100 \times 120}{1320 \times \frac{2}{3}}\right)\% = 13\frac{7}{11}\%.$