

Aptitude :: Banker's Discount

Ques1: The banker's discount on a bill due 4 months hence at 15% is Rs. 420. The true discount is:

- A. Rs. 400
- B. Rs. 360
- C. Rs. 480
- D. Rs. 320

Answer: Option A

Explanation:

$$\begin{aligned} \text{T.D.} &= \frac{\text{B.D.} \times 100}{100 + (\text{R} \times \text{T})} \\ &= \text{Rs.} \left[\frac{420 \times 100}{100 + \left(15 \times \frac{1}{3}\right)} \right] \end{aligned}$$

$$= \text{Rs.} \left(\frac{420 \times 100}{105} \right)$$

$$= \text{Rs.} 400.$$

Ques2: 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:

- A. 3 months
- B. 4 months
- C. 6 months
- D. 8 months

Answer: Option B

Explanation:

S.I. on Rs. 1600 = T.D. on Rs. 1680.

∴ Rs. 1600 is the P.W. of Rs. 1680, i.e., Rs. 80 is on Rs. 1600 at 15%.

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

Ques3: The banker's gain of a certain sum due 2 years hence at 10% per annum is Rs. 24. The present worth is:

- A. Rs. 480
- B. Rs. 520
- C. Rs. 600
- D. Rs. 960

Answer: Option C

Explanation:

$$\begin{aligned} \text{T.D.} &= \left(\frac{\text{B.G.} \times 100}{\text{Rate} \times \text{Time}} \right) = \text{Rs.} \left(\frac{24 \times 100}{10 \times 2} \right) = \text{Rs.} 120. \\ \therefore \text{P.W.} &= \frac{100 \times \text{T.D.}}{\text{Rate} \times \text{Time}} = \text{Rs.} \left(\frac{100 \times 120}{10 \times 2} \right) = \text{Rs.} 600. \end{aligned}$$

Ques4: The banker's discount on a sum of money for 1 years is Rs. 558 and the true discount on the same sum for 2 years is Rs. 600. The rate percent is:

- A. 10%
- B. 13%
- C. 12%
- D. 15%

Answer: Option C

Explanation:

$$\text{B.D. for } \frac{3}{2} \text{ years} = \text{Rs.} 558.$$

$$\begin{aligned} \text{B.D. for 2 years} &= \text{Rs.} \left(558 \times \frac{2}{3} \times 2 \right) \\ &= \text{Rs.} 744 \end{aligned}$$

$$\text{T.D. for 2 years} = \text{Rs.} 600.$$

$$\therefore \text{Sum} = \frac{\text{B.D.} \times \text{T.D.}}{\text{B.D.} - \text{T.D.}} = \text{Rs.} \left(\frac{744 \times 600}{144} \right) = \text{Rs.} 3100.$$

Thus, Rs. 744 is S.I. on Rs. 3100 for 2 years.

$$\therefore \text{Rate} = \left(\frac{100 \times 744}{3100 \times 2} \right) \% = 12\%$$

Ques5: The banker's gain on a sum due 3 years hence at 12% per annum is Rs. 270. The banker's discount is:

- A. Rs. 960
- B. Rs. 840
- C. Rs. 1020
- D. Rs. 760

Answer: Option C

Explanation:

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$$\text{T.D.} = \left(\frac{\text{B.G.} \times 100}{R \times T} \right) = \text{Rs.} \left(\frac{270 \times 100}{12 \times 3} \right) = \text{Rs.} 750.$$

$$\therefore \text{B.D.} = \text{Rs.}(750 + 270) = \text{Rs.} 1020.$$

Ques6: The banker's discount of a certain sum of money is Rs. 72 and the true discount on the same sum for the same time is Rs. 60. The sum due is:

- A. Rs. 360
- B. Rs. 432
- C. Rs. 540
- D. Rs. 1080

Answer: Option A

Explanation:

$$\text{Sum} = \frac{\text{B.D.} \times \text{T.D.}}{\text{B.D.} - \text{T.D.}} = \text{Rs.} \left(\frac{72 \times 60}{72 - 60} \right) = \text{Rs.} \left(\frac{72 \times 60}{12} \right) = \text{Rs.} 360.$$

Ques7: The certain worth of a certain sum due sometime hence is Rs. 1600 and the true discount is Rs. 160. The banker's gain is:

- A. Rs. 20
- B. Rs. 24
- C. Rs. 16
- D. Rs. 12

Answer: Option C

Explanation:

$$\text{B.G.} = \frac{(\text{T.D.})^2}{\text{P.W.}} = \text{Rs.} \left(\frac{160 \times 160}{1600} \right) = \text{Rs.} 16.$$

Ques8: 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:

- A. Rs. 37
- B. Rs. 37.62
- C. Rs. 34.38
- D. Rs. 38.98

Answer: Option B

Explanation:

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

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

Ques9: The banker's gain on a bill due 1 year hence at 12% per annum is Rs. 6. The true discount is:

- A. Rs. 72
- B. Rs. 36
- C. Rs. 54
- D. Rs. 50

Answer: Option D

Explanation:

$$\text{T.D.} = \frac{\text{B.G.} \times 100}{R \times T} = \text{Rs. } \left(\frac{6 \times 100}{12 \times 1} \right) = \text{Rs. } 50.$$

Ques10: The present worth of a sum due sometime hence is Rs. 576 and the banker's gain is Rs. 16. The true discount is:

- A. Rs. 36
- B. Rs. 72
- C. Rs. 48
- D. Rs. 96

Answer: Option D

Explanation:

$$\text{T.D.} = \text{P.W.} \times \text{B.G.} = 576 \times 16 = 96$$

Ques11: The true discount on a bill of Rs. 540 is Rs. 90. The banker's discount is:

- A. Rs. 60
- B. Rs. 108
- C. Rs. 110
- D. Rs. 112

Answer: Option B

Explanation:

$$\text{P.W.} = \text{Rs. } (540 - 90) = \text{Rs. } 450.$$

$$\therefore \text{S.I. on Rs. } 450 = \text{Rs. } 90.$$

$$\text{S.I. on Rs. } 540 = \text{Rs. } \left(\frac{90}{450} \times 540 \right) = \text{Rs. } 108.$$

$$\therefore \text{B.D.} = \text{Rs. } 108.$$

Ques12: The banker's discount on a certain sum due 2 years hence is $\frac{11}{10}$ of the true discount.

The rate percent is:

- A. 11%
- B. 10%
- C. 5%
- D. 5.5%

Answer: Option C

Explanation:

Let T.D. be Re. 1.

Then, B.D. = Rs. $\frac{11}{10}$ = Rs. 1.10.

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

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

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

Ques13: The banker's discount on a certain sum due 2 years hence is 11/10 of the true discount. The rate percent is :

- A) 11%
- B) 10%
- C) 5%
- D) 5.5%

Answer: Option C

Explanation:

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

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

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

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

Ques14: The banker's discount on a bill due 4 months hence at 15% is Rs. 420. The true discount is:

- A) Rs. 400

- B) Rs. 360
- C) Rs. 480
- D) Rs. 320

Answer: Option A

Explanation:

$$\text{T.D.} = \frac{\text{B.D.} \times 100}{100 + (R \times T)} = \text{Rs.} \left[\frac{420 \times 100}{100 + \left(15 \times \frac{1}{3}\right)} \right] = \text{Rs.} \left(\frac{420 \times 100}{105} \right) = \text{Rs.} 400.$$

Ques15: The banker's gain of a certain sum due 2 years hence at 10% per annum is Rs. 24. The present worth is :

- A) Rs. 480
- B) Rs. 520
- C) Rs. 600
- D) Rs.960

Answer: Option C

Explanation:

$$\text{T.D.} = \left(\frac{\text{B.G.} \times 100}{\text{Rate} \times \text{Time}} \right) = \text{Rs.} \left(\frac{24 \times 100}{10 \times 2} \right) = \text{Rs.} 120.$$

$$\therefore \text{P.W.} = \frac{100 \times \text{T.D.}}{\text{Rate} \times \text{Time}} = \text{Rs.} \left(\frac{100 \times 120}{10 \times 2} \right) = \text{Rs.} 600.$$