

Book For  
Bank of Baroda



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(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:

- [A] 3 months
- [B] 4 months
- [C] 6 months
- [D] 8 months

Answer : [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%.

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

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(2) 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 : [A]

**Explanation:**

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

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(3)

The banker's gain on a certain sum due  $1\frac{1}{2}$  years hence is  $\frac{3}{25}$  of the banker's discount. The rate percent is:

- [A]  
 $5\frac{1}{5}\%$
- [B]  
 $9\frac{1}{11}\%$
- [C]  
 $8\frac{1}{8}\%$
- [D]  
 $6\frac{1}{6}\%$

Answer : [B]

**Explanation:**

Let, B.D = Re. 1.

Then, B.G. = Re.  $\frac{3}{25}$ .

$$\therefore \text{T.D.} = (\text{B.D.} - \text{B.G.}) = \text{Re.} \left( 1 - \frac{3}{25} \right) = \text{Re.} \frac{22}{25}.$$

$$\text{Sum} = \left( \frac{1 \times (22/25)}{1 - (22/25)} \right) = \text{Rs.} \frac{22}{3}.$$

S.I. on Rs.  $\frac{22}{3}$  for  $1\frac{1}{2}$  years is Re. 1.

$$100 \times 1 = \frac{100}{9} = 9\frac{1}{9}\%.$$

$$\therefore \text{Rate} = \left( \frac{\frac{22}{3} \times \frac{3}{2}}{11 \times 11} \right) \%$$

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**(4) 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 : [D]**

**Explanation:**

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

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**(5) 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 : [B]**

**Explanation:**

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

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

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

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

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**(6)**

$\frac{\log 8}{\log 8}$  is equal to:

[A]  $\frac{1}{8}$

[B]  $\frac{1}{4}$

[C]  $\frac{1}{2}$

[D]  $\frac{1}{8}$

**Answer : [C]**

**Explanation:**

$$\frac{\log 8}{\log 8} = \frac{\log (8)^{1/2}}{\log 8} = \frac{\frac{1}{2} \log 8}{\log 8} = \frac{1}{2}.$$

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(7) Which of the following statements is not correct?

[A]  $\log_{10} 10 = 1$

[B]  $\log (2 + 3) = \log (2 \times 3)$

[C]  $\log_{10} 1 = 0$

[D]  $\log (1 + 2 + 3) = \log 1 + \log 2 + \log 3$

**Answer : [B]**

**Explanation:**

(a) Since  $\log_a a = 1$ , so  $\log_{10} 10 = 1$ .

(b)  $\log (2 + 3) = \log 5$  and  $\log (2 \times 3) = \log 6 = \log 2 + \log 3$

$\therefore \log (2 + 3) \neq \log (2 \times 3)$

(c) Since  $\log_a 1 = 0$ , so  $\log_{10} 1 = 0$ .

(d)  $\log (1 + 2 + 3) = \log 6 = \log (1 \times 2 \times 3) = \log 1 + \log 2 + \log 3$ .

So, (b) is incorrect.

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(8) If  $\log_{10} 5 + \log_{10} (5x + 1) = \log_{10} (x + 5) + 1$ , then  $x$  is equal to:

[A] 1

[B] 3

[C] 5

[D] 10

**Answer : [B]**

**Explanation:**

$$\log_{10} 5 + \log_{10} (5x + 1) = \log_{10} (x + 5) + 1$$

$$\Rightarrow \log_{10} 5 + \log_{10} (5x + 1) = \log_{10} (x + 5) + \log_{10} 10$$

$$\Rightarrow \log_{10} [5(5x + 1)] = \log_{10} [10(x + 5)]$$

$$\Rightarrow 5(5x + 1) = 10(x + 5)$$

$$\Rightarrow 5x + 1 = 2x + 10$$

$$\Rightarrow 3x = 9$$

$$\Rightarrow x = 3.$$

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(9)

If  $\log_x \left( \frac{9}{16} \right) = -\frac{1}{2}$ , then  $x$  is equal to:

[A]  $-\frac{3}{4}$

[B]  $\frac{3}{4}$

[C]  $\frac{81}{256}$

[D]  $\frac{256}{81}$

**Answer : [D]**

**Explanation:**

$$\log_x \left( \frac{9}{16} \right) = -\frac{1}{2}$$

$$\Rightarrow x^{-1/2} = \frac{9}{16}$$

$$\Rightarrow \frac{1}{x} = \frac{9}{16}$$

$$\Rightarrow x = \frac{1}{9}$$

$$\Rightarrow x = \left(\frac{16}{9}\right)^2$$

$$\Rightarrow x = \frac{256}{81}$$

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(10) If  $a^X = b^Y$ , then:

[A]  
 $\log \frac{a}{b} = \frac{x}{y}$

[B]  
 $\frac{\log a}{\log b} = \frac{x}{y}$

[C]  
 $\frac{\log a}{\log b} = \frac{y}{x}$

[D] None of these

Answer : [C]

Explanation:

$$a^X = b^Y$$

$$\Rightarrow \log a^X = \log b^Y$$

$$\Rightarrow x \log a = y \log b$$

$$\Rightarrow \frac{\log a}{\log b} = \frac{y}{x}$$

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(11)  $1.\overline{5625} = ?$

[A] 1.05

[B] 1.25

[C] 1.45

[D] 1.55

Answer : [B]

Explanation:

$$1\overline{.5625} = 1.25 \quad |1 \quad | \dots \quad 22| \quad 56 \quad | \quad 44 \quad | \dots \quad 245| \quad 1225 \quad | \quad 1225 \quad | \dots \quad | \quad x \quad | \dots$$

$$\therefore 1.\overline{5625} = 1.25.$$

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(12) The least perfect square, which is divisible by each of 21, 36 and 66 is:

[A] 213444

[B] 214344

[C] 214434

[D] 231444

Answer : [A]

Explanation:

L.C.M. of 21, 36, 66 = 2772.

Now,  $2772 = 2 \times 2 \times 3 \times 3 \times 7 \times 11$

To make it a perfect square, it must be multiplied by  $7 \times 11$ .

So, required number =  $2^2 \times 3^2 \times 7^2 \times 11^2 = 213444$

(13) The cube root of .000216 is:

- [A] .6
- [B] .06
- [C] 77
- [D] 87

Answer : [B]

Explanation:

$$\begin{aligned} (.000216)^{1/3} &= \left(\frac{216}{10^6}\right)^{1/3} \\ &= \left(\frac{6 \times 6 \times 6}{10^2 \times 10^2 \times 10^2}\right)^{1/3} \\ &= \frac{6}{10^2} \\ &= \frac{6}{100} \\ &= 0.06 \end{aligned}$$

(14)

$\left(\frac{625}{11} \times \frac{14}{25} \times \frac{11}{196}\right)$  is equal to:

- [A] 5
- [B] 6
- [C] 8
- [D] 11

Answer : [A]

Explanation:

$$\text{Given Expression} = \frac{25}{11} \times \frac{14}{5} \times \frac{11}{14} = 5.$$

(15) The square root of 64009 is:

- [A] 253
- [B] 347
- [C] 363
- [D] 803

Answer : [A]

Explanation:

$$2 \overline{)64009} \begin{array}{r} 253 \\ \underline{4} \phantom{00} \\ 40 \phantom{0} \\ \underline{45} \phantom{0} \\ 240 \phantom{0} \\ \underline{225} \phantom{0} \\ 1509 \phantom{0} \\ \underline{1509} \\ 0 \end{array}$$

$$\therefore 64009 = 253^2.$$

(16) A clock is started at noon. By 10 minutes past 5, the hour hand has turned through:

- [A] 145°

[B] 150?

[C] 155?

[D] 160?

**Answer : [C]**

**Explanation:**

Angle traced by hour hand in 12 hrs = 360°.

Angle traced by hour hand in 5 hrs 10 min. i.e.,  $\frac{31}{6}$  hrs =  $\left(\frac{360}{12} \times \frac{31}{6}\right)^\circ = 155^\circ$ .

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**(17) At what angle the hands of a clock are inclined at 15 minutes past 5?**

[A]  
 $58\frac{1}{2}$ °

[B] 64°

[C]  
 $67\frac{1}{2}$ °

[D]  
 $72\frac{1}{2}$ °

**Answer : [C]**

**Explanation:**

Angle traced by hour hand in  $\frac{21}{4}$  hrs =  $\left(\frac{360}{12} \times \frac{21}{4}\right)^\circ = 157\frac{1}{2}$ °

Angle traced by min. hand in 15 min. =  $\left(\frac{360}{60} \times 15\right)^\circ = 90^\circ$ .

∴ Required angle =  $\left(157\frac{1}{2}\right)^\circ - 90^\circ = 67\frac{1}{2}$ °

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**(18) At what time between 9 and 10 o'clock will the hands of a watch be together?**

[A] 45 min. past 9

[B] 50 min. past 9

[C]  
 $49\frac{1}{11}$  min. past 9

[D]  
 $48\frac{2}{11}$  min. past 9

**Answer : [C]**

**Explanation:**

To be together between 9 and 10 o'clock, the minute hand has to gain 45 min. spaces.

55 min. spaces gained in 60 min.

45 min. spaces are gained in  $\left(\frac{60}{55} \times 45\right)$  min or  $49\frac{1}{11}$  min.

∴ The hands are together at  $49\frac{1}{11}$  min. past 9.

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**(19) How many times are the hands of a clock at right angle in a day?**

[A] 22

[B] 24

[C] 44

[D] 48

**Answer :** [C]

**Explanation:**

In 12 hours, they are at right angles 22 times.

∴ In 24 hours, they are at right angles 44 times.

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**(20) How many times in a day, the hands of a clock are straight?**

[A] 22

[B] 24

[C] 44

[D] 48

**Answer :** [C]

**Explanation:**

In 12 hours, the hands coincide or are in opposite direction 22 times.

∴ In 24 hours, the hands coincide or are in opposite direction 44 times a day.

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