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Bank PO Maths Quiz 36

Direction: Study the following questions carefully and choose the right answer.

1. A sum of money increases every year 1/8 times. At the end of 3 years, the sum of money become Rs. 4556.25 then what was the total increase in the first two years?

A. Rs. 950   B. Rs. 800   C. Rs. 1025   D. Rs. 850   E. None of these

2. In a class of 180 students, each student got chocolates that were 15% of the total number of students. If the number of chocolates is 20% more and the number of students is 10% less, then how many chocolates per student can be distributed?

A. 40   B. 32   C. 30   D. 42   E. None of these

3. The speed of a motorboat in upstream is 12 km per hour while river is flowing with a speed of 2 km per hour. If the motorboat takes 3 hours more to travel x km in still water than to travel x – 24 km in downstream. Find the value of x?

A. 154 km   B. 168 km   C. 175 km   D. 182 km   E. None of these

4. A man purchased some goods and marks the price 20% above the cost price. If he sells one third of the goods at the discount of 5% on the marked price then what percentage of discount should he offer on the marked price of remaining goods, if he desires to earn total 8% profit on the cost price?

A. 12.5%   B. 12%   C. 7.5%   D. 15%   E. None of these

5. Ram and Rahim started a joint business. The initial investment of Ram was thrice that of Rahim's initial investments and period of Rahim's investments was four times more than that of Ram's period of investments. If the difference between the profit of Ram and Rahim was Rs. 4500 then what was the 50% of total profit?

A. Rs. 18000   B. Rs. 15750   C. Rs. 11250   D. Rs. 16250   E. None of these

6. The ratio of the area of a square to the area of a circle is 77 : 8. If the area of the square is 1482.25 sq. cm. Another square B is circumscribed of the circle then the area of the square B is how much (in sq. cm) more than that of the area of the circle?

A. 48   B. 56   C. 42   D. 36   E. None of these

7. From a bag contains 6 apples, 4 mangoes, and 3 bananas, 5 fruits are to be selected. In how many ways selection can be done if in the five fruits, there should always be at least 1 apple, 1 Mango, and 1 banana and the number of same type of fruits should not be selected in even number?

A. 240 ways   B. 446 ways   C. 336 ways   D. 348 ways   E. None of these

8. By selling 60 chocolates, a shopkeeper realized that he had made profit exactly equal to selling price of 10 chocolates. The selling price of one chocolate is how much percentage above the cost price of one chocolate?

A. 25%   B. 20%   C. 30%   D. 10%   E. None of these

9. A discount of 40% was offered on the marked price, then profit was Rs. 480, which was 10% of cost price. Instead of 40%, if 30% discount was offered on the marked price, then how much profit would have been received (In Rs.)?

A. 1360   B. 1425   C. 1220   D. 620   E. None of these

10. Train A of length 200 meters is running with the uniform speed of 65 km per hour. Another train B of length x meters is running on parallel track of train A in opposite direction with speed of 85 km per hour. If they cross each other in 9 seconds, then what is the value of x?

A. 150   B. 175   C. 225   D. 250   E. None of these

Correct Answers:

1	2	3	4	5	6	7	8	9	10
D	E	B	A	B	C	C	B	A	B

Explanations:

1. Let the sum of money = Rs. x then at the end of 3 years, the sum of money

$$= x \times \frac{9}{8} \times \frac{9}{8} \times 9/8 = 4556.25$$

By solving, x = 6.25 × 8 × 8 × 8 = 3200

Total amount at the end of 2 years

$$= 3200 \times \frac{9}{8} \times \frac{9}{8} = 4050$$

The total increase = 4050 – 3200 = Rs. 850

Hence, option D is correct.

2. The number of chocolates each student got

$$= 15\% \text{ of } 180 = \frac{15 \times 180}{100} = 27$$

The total number of chocolates = 27 × 180

$$120\% \text{ of } 27 \times 180 = \frac{120 \times 27 \times 180}{100} = 12 \times 27 \times 18$$

The new number of students = 90% of 180 = $90 \times \dfrac{180}{100} = 9 \times 18$

The number of chocolates each student will get = $\dfrac{12 \times 27 \times 18}{9 \times 18}$ = 12 × 3 = 36 chocolates per student

Hence, option E is correct.

3. The speed of the motorboat in still water = u km per hour and the speed of the river = 2 km per hour

Upstream speed = u – v = u – 2 = 12 km per hour

The speed of the motorboat in still water = 12 + 2 = 14 km per hour

Downstream speed = u + v = 14 + 2 = 16 km per hour

According to the question,

$$\frac{x}{14} - \frac{x-24}{16} = 3$$

By solving, x = 168 km

Hence, option B is correct.

4. Let he purchased 300 kg of goods at the rate of Rs. 1 per kg then total MP = 120% of 300 = Rs. 360

The marked price per kg = 120% of 1 = 1.2

One third of the goods = $\dfrac{300}{3}$ = 100 kg

The selling price = 100 × 1.2 × (100 − 5)% = $\dfrac{100 \times 1.2 \times 95}{100}$ = Rs. 114

He desires to earn 80% profit on Rs. 300 = (100 + 8)% of 300 = $\dfrac{108 \times 300}{100}$ = 324

The selling price of Remaining 200 kg = 324 − 114 = Rs. 210

The MP of 200 kg = 200 × 1.2 = 240

The reqd. % of discount = $\dfrac{(240 - 210) \times 100}{240}$

= $\dfrac{30 \times 100}{240} = \dfrac{100}{8}$ = 12.5%

Hence, option A is correct.

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5. Let Rahim's investments = x then Ram's investments = 3x

Let the period of Ram's investments = y then the period of Rahim's investments = 4y

The ratio of their profit = Ram : Rahim = 3x × y : x × 4y = 3 : 4

Let the profit of Ram = 3a then the profit of Rahim = 4a

According to the question, 4a − 3a = a = 4500

Total profit = 4a + 3a = 7a = 7 × 4500

50% of total profit = $\dfrac{7 \times 4500}{2}$ = 15750

Hence, option B is correct.

6.

The area of the circle $= \dfrac{8 \times 1482.25}{77} = 8 \times 19.25 = 154$ sq. cm

The area $= A = \pi r^2 = 154$

$\dfrac{22}{7} \times r^2 = 154$

By solving, r = 7 cm

The sides of circumscribed square = radius of circle × 2 = 7 × 2 = 14 cm

Area $= 14^2 = 196$ cm

The required difference = 196 – 154 = 42 sq. cm

Hence, option C is correct.

7.

Case 1 : 1 apple, 1 Mango, 3 bananas

The number of ways $= {}^6C_1 \times {}^4C_1 \times {}^3C_3 = 6 \times 4 \times 1 = 24$ ways

Case2 : 1 apple, 1 banana, 3 mangoes

The number of ways $= {}^6C_1 \times {}^3C_1 \times {}^4C_3 = 6 \times 3 \times 4 = 72$ ways

Case3 : 1 banana, 1 mango, 3 apples

The number of ways $= {}^3C_1 \times {}^4C_1 \times {}^6C_3 = 3 \times 4 \times 4 \times 5 = 240$ ways

The total number of ways = 72 + 240 + 24 = 336 ways

In the rest other selection, the same type of fruits will become in even number.

Hence, option C is correct.

8.

Let the SP of one chocolate = Rs. 1 the SP of 60 chocolates = Rs. 60

Profit = Rs. 10

CP = SP – Profit = 60 – 10 = Rs. 50

The cost price of 60 chocolates = Rs. 50 and the SP = Rs. 60

The reqd. % $= \dfrac{(60 - 50) \times 100}{50} = 20\%$

Hence, option B is correct.

9. Let CP = Rs. 100x

10% of 100x = 480

x = 48

Therefore, CP = Rs. 4800

SP = Rs. (4800 + 480) = Rs. 5280

Let the marked price = Rs. 100y then SP = (100 – 40)% of 100y = 60y = 5280

By solving, y = 88

Therefore, MP = 100y = 88 × 100 = Rs. 8800

When discount of 30% was offered then the SP = (100 – 30)% of 8800 = 70 × 88 = Rs. 6160

Profit = Rs. (6160 – 4800) = Rs. 1360

Hence, option A is correct.

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10. The relative speed of both the train = 65 + 85 = 150 km per hour

$$= \frac{150 \times 5}{18} = \frac{125}{3} \text{ m/sec}$$

We know that, distance = speed × time

$$200 + x = \frac{125}{3} \times 9 = 375$$

x = 375 – 200 = 175

Hence, option B is correct.