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Profit and loss Questions for SBI PO, IBPS PO and RBI Grade B Exams.

Profit and Loss Quiz 17

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

1. Tarak Mehta sold a pair of Tshirt and jeans at 25% profit. The profit obtained on Tshirt was 20%. Had he reduced the both cost price of the Tshirt and selling price of the Tshirt by Rs. 200, his profit on the pair would have risen to 30%. Earlier cost price of the jeans was Rs.80 less than half of the selling price of the Tshirt. What price should he mark on a pair of Tshirt and jeans to earn a profit of 50%?

- A. Rs. 1680 B. Rs. 1800 C. Rs. 2420 D. Rs. 2740 E. Rs. 3400

2. Sohan bought an old Honda Bike and spent Rs. 1500 on its repairs. Then Sohan sold it to Rakesh at a profit of 20%. Rakesh sold it to Raj at a loss of 10%. Raj finally sold it for Rs. 12100 at a profit of 10%. How much did Sohan pay for the old Honda Bike?

- A. Rs. 10185 B. Rs. 10800 C. Rs. 8685 D. Rs. 8600 E. None of these

3. Sourav Ganguly wants to buy a total of 100 sports equipment using exactly a sum of Rs.1000. He can buy ball at Rs.20 per unit, wicket at Rs.5 per unit and bat at Rs.1 per unit. If he has to buy at least one of each equipment and cannot buy any other type of equipment, then in how many distinct ways can he make his purchase?

- A. 5 B. 2 C. 3 D. 6 E. 1

4. In St. Peter's college Agra an exhibition was organised, hand-made crafts are displayed for sale. Some students are assigned the work of selling crafts. The overall profit p depends on the number of students x selling the crafts on that particular day and is given by the equation $p = 250x - 5x^2$. The school manager claims to have made a maximum profit. Find the number of students engaged in selling the crafts and the maximum profit made.

- A. 25 and Rs. 1800 B. 25 and Rs. 2900 C. 25 and Rs. 3125 D. 30 and Rs. 3900 E. None of these

5. In MG Road Delhi PVR has 300 seats. The price of each ticket, when the theatre is houseful, is Rs.60. For every Rs.1 increase in the price of the ticket, the number of tickets sold goes down by 2. What is the price of the ticket (in Rs.) for which the theatre owner would earn the maximum possible revenue?

- A. Rs. 90 B. Rs. 105 C. Rs. 120 D. Rs. 150 E. Rs. 175

6. Manu bought a Jacket from Sarojini market at Rs.1000 and marked up its price by P%. He then gave a discount of $(0.4 \times P)\%$ and still got a profit percentage of $(0.4 \times P)\%$. What is the amount of discount?

- A. Rs. 100 B. Rs. 200 C. Rs. 250 D. Rs. 300 E. None of these

7. The cost prices of three sports items, Ball Jacket, Bat Socks and Thigh Pad Shoes, are in the ratio 2 : 3 : 4 respectively. If these three items are sold such that a profit of 20% is registered on Jacket, a profit of 25% is registered on Socks and a loss of 10% is incurred on Shoes, then which of the following gives the overall percentage of profit/loss made in the three transactions put together?

- A. 8.33% Profit B. 10.33% loss C. 11.25% Profit D. 15.40% Profit E. None of these

8. Pranav went to the market and bought apricot, bananas and guava. He purchased at least 25 fruits of each variety and calculated that if the cost of each guava was Re.1 more, and the cost of each banana was Rs.4 more, than his total expenditure on the fruits would have gone up by Rs.136. If he bought a total of 80 fruits, find the number of bananas he purchased.

- A. 27 B. 30 C. 25 D. 28 E. None of these

9. Aman and Bhanu ran a business after investing some money together. At the end of the first year, out of a total profit of Rs.1000, Aman gets Rs.400, which is Rs.25 more than what he would have got if he had invested Rs.3000 less and Bhanu had invested Rs. 1000 less. Find Bhanu's share of the profit, if Aman had invested Rs.3000 more and Bhanu had invested Rs.3000 less. (Assume the same profit in all cases)

- A. 250 B. 350 C. 550 D. 600 E. None of these

10. Ram went to a shop to buy some Cosco and Plastic balls. Cosco balls cost Rs 300 each while Plastic balls cost Rs.400 each. Ram spent a total of Rs.3600 on the balls. If he had bought as many Plastic balls as the number of Cosco balls he actually bought and vice versa, he would have saved an amount equal to half the cost of one ball of one of the two types. Find the total number of balls he actually bought.

- A. 15 B. 25 C. 20 D. 10 E. 12



CORRECT ANSWERS:

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



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Explanations:

1. Let Cost price of each Tshirt = s

Cost price of each Jeans = p

Selling price of each Tshirt = h

And, Selling price of each Jeans = a

From question

$$h + a = 1.25 (s + p) \dots\dots(i)$$

$$h = 1.2s \dots\dots (ii)$$

$$(h + a - 200) = 1.3 (s + p - 200) \dots\dots (iii)$$

$$\text{And, } p = \frac{h}{2} - 80 \dots\dots\dots (iv)$$

Solving the above system of equation we get,

$$s = 800, p = 400, h = 960 \text{ and, } a = 540$$

Total cost price of a pair of Tshirt and jeans = $800 + 400 = 1200$

Required marked price = $1200 \times 1.5 = \text{Rs.}1800$

Hence, option (B) is correct.

2.

$$\text{Cost price of Honda Bike for Raj} = \frac{12100}{1.1} = 11000$$

Since selling price of Honda Bike by Rakesh = Rs. 11000

From question Cost price of Honda Bike for Rakesh

$$= \frac{11000}{0.9} = \text{Rs. } 12222.22$$

Since selling price of Honda Bike by Sohan = Rs. 12222.22

According to question sohan got 20% profit

Since Cost Price of Honda Bike for Sohan

$$= \frac{12222.22}{1.2} = \text{Rs. } 10185.2$$

This cost price includes a Rs. 1500 for repairs.

Hence purchase price for Sohan = $10185.2 - 1500 = \text{Rs. } 8685$

Therefore option (C) is correct.

3. Let the number of ball, wickets and bats purchased be A, B and C, respectively.

Thus,

$$20A + 5B + C = 1000 \text{ and } A + B + C = 100$$

Solving the above two equations by eliminating C, we Get

$$19A + 4B = 900$$

$$\Rightarrow B = 225 - \frac{19}{4}A$$

Now, as B is the number of wickets and $0 < B < 99$,

So, putting these limiting values of B in the above equation will provide the value of A as $27 < A < 47$.

Since A has to be the multiple of 4, so possible values of A are 28, 32, 36, 40 and 44.

Now, for A = 28 and 32; $A + B > 100$, so these values of A can be rejected.

For all other values of A, we get the desired solution:

$$A = 36, B = 54, C = 10$$

$$A = 40, B = 35, C = 25$$

$$A = 44, B = 16, C = 40$$

Thus, there are three possible solutions.

Hence, option (C) is correct.

4. For profit to be maximum, the derivative of p with reference to x must be 0 and hence

$$= \frac{d(250x - 5x^2)}{dx} = 0 = 250 - 10x = 0$$

$$\text{So } x = 25$$

Now p for x = 25 is

$$= 250(25) - 5(25)^2 = \text{Rs}3125$$

Hence, option (C) is correct.

5. Let the price of the ticket be = Rs. $(60 + x)$, where x is greater than zero.

The number of people in the audience would then be $(300 - 2 \times x)$.

The revenue of the theatre owner be = $(60 + x) \times (300 - 2 \times x) = (18000 + 180 \times x - 2 \times x^2)$

This is quadratic expression which achieves a maximum value when $x = -\frac{\text{coefficient of } x}{2 \times \text{coefficient of } x^2}$

Quadratic equation has achieved a maximum value when $x = -\frac{b}{2a}$

$$\text{So, } x = -\frac{180}{-2 \times 2} = 45$$

Hence, the price of ticket at maximum revenue = $(60 + 45) = \text{Rs. } 105$.

Therefore, option (B) is correct.

6. After a markup of $P\%$, the marked price becomes Rs. $(1000 + 10 \times P)$

After a discount of $(0.4 \times P)\%$, the selling price becomes

$$(1000 + 10 \times P) \times \left[1 - \left(0.4 \times \frac{P}{100}\right)\right]$$

$$= 1000 + 6 \times P - \frac{P^2}{25} \dots \dots \text{(i)}$$

Given that the final profit = $(0.4 \times P)\%$

$$\Rightarrow \text{Selling Price} = \left[1000 + 1000 \times \left(0.4 \times \frac{P}{100}\right)\right]$$

$$= (1000 + 4 \times P) \dots \dots \text{(ii)}$$

As, equation (i) is equal to equation (ii)

$$1000 + 6 \times P - \frac{P^2}{25} = (1000 + 4 \times P)$$

$$\Rightarrow (6 \times P - 4 \times P) = \frac{P^2}{25}$$

$$\Rightarrow P = 50$$

As, discount = Market price – Selling price = $(1000 + 10 \times P) - (1000 + 4 \times P) = 6 \times P = (6 \times 50) = 300$

Hence, amount of discount = Rs. 300.

Therefore, option (D) is correct.

7. Let the cost price are Rs. 200, Rs. 300 and Rs. 400

	Jacket	Socks	Shoes	Total
CP	200	300	400	900
Profit/loss	40	75	-40	75

$$\text{Overall profit \%} = \frac{75}{900} \times 100 = 8.33\%$$

Hence, option (A) is correct.

8. Let the number of apricot, bananas and Guava bought be a, b and g.

$$\text{Given that } a + b + g = 80$$

$$a \geq 25, b \geq 25, g \geq 25$$

$$\Rightarrow 25 \leq a, b, c \leq 30$$

As the increase in cost per guava by Re.1 and the increase in cost per banana by Rs.4 increases the overall bill by Rs.136, $g + 4b = 136$

In order to satisfy, the above condition, g must be a multiple of 4. Hence, it has to be 28.

Hence, b is 27 and a is 25.

Hence, Pranav purchased 27 bananas

Hence option A is correct.

9. Let the capitals of Aman and Bhanu be in the ratio of a : b

$$\text{i.e. } \frac{a}{b} = \frac{400}{600} = \frac{2}{3} \dots\dots\dots(i)$$

$$\text{further } \frac{a - 3000}{b - 1000} = \frac{375}{625} = \frac{3}{5} \dots\dots\dots(ii)$$

Solving (1) and (2)

$$a = 24000 \text{ where } b = 36,000$$

If Aman had invested 3000 more and Bhanu had invest 3000 less,
then a : b = (24000 + 3000) : (36000 - 3000) = 9 : 11

$$\text{Bhanu's share} = \text{Profit} \frac{11}{11 + 9}$$

$$= 1000 \times \frac{11}{20} = 550$$

Hence option C is correct.

10. The cost and the number (actual and 'if) of balls are tabulated below.

	Cosco	Plastic
Cost in hundred	3	4
Number, Actual	x	y
Number if	y	x

$$\text{Given } 3x + 4y = 36 \dots\dots (1)$$

$$\text{And } (3x + 4y) - (4x - 3y) = (y - x) = 1.5 \text{ or } 2$$

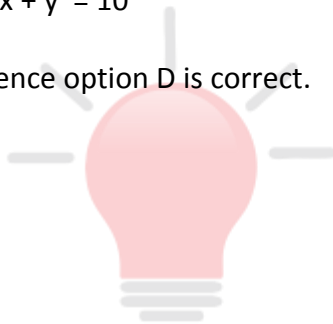
If $y - x = 1.5$ we don't get integral value of x, y

$$\therefore y - x = 2 \dots\dots (2)$$

Solving (1) and (2) we get $x = 4, y = 6$

$$\therefore x + y = 10$$

Hence option D is correct.



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