

Quiz Date: 5th April 2020

Q1. A man bought two articles at different cost price and sold them, 1st at 12.5% profit and second at profit of 20%. The selling price of both the items is same and difference of profit earn on both is Rs. 10. Find the total cost price of both articles (in Rs.)?

- (a) 280
- (b) 300
- (c) 310
- (d) 320
- (e) 350

Directions (2-3): Ramu and Shyamu decide to sell their cars each at Rs. 36,000. While Ramu decided to give a discount of 8% on the first Rs. 8000, 5% on next Rs. 12000 and 3% on the rest to buyer Shashi. Shyamu decided to give a discount of 7% on the first 12000, 6% on next 8000 and 5% on the rest to buyer Rajesh. These discounts were, however, subject to the buyers making the payment on time and on failing the condition the discount gets reduced by 1% for every delay of a week. In each case, the selling price of 36,000 was arrived at by increasing the cost price by 25%.

Q2. If each of them got the payments on time, what is the approximate percentage profit of the person getting the higher profit ?

- (a) 19%
- (b) 21%
- (c) 25%
- (d) 17%
- (e) 20%

Q3. If Shashi defaults by 1 and 2 weeks in the second and third payments respectively, what would be the profit of Ramu in the sale of the car ? (in Rs)

- (a) Rs. 5920
- (b) Rs. 6240
- (c) Rs. 5860
- (d) Rs. 5980
- (e) None of these

Q4. Three articles having same cost price are sold in profit such that profit percent are in A.P. in which common difference is half of the least profit percent. If total revenue of these three articles is 1035 Rs. then find the second highest selling price.

- (a) 300
- (b) 330
- (c) 360
- (d) 400
- (e) 345

Q5. Ratio between cost price and selling price of a article is 8 : 9 and ratio between numerical value of profit percent and numerical value of profit is 25 : 4. Find the selling price of the article.

- (a) 18
- (b) 27
- (c) cannot be determined
- (d) 16
- (e) 24

Q6. The marked price of a bike in two stores A and B is same. In store A bike is available at 30% discount and in store B same bike is available at two successive discounts of $d\%$ and 8%. A man bought bike from store A at Rs. 49000. If man would have paid Rs. 7672 more, he could have bought the same bike from store B. Find the discount 'd' allowed by store B on bike ?

- (a) 8%
- (b) 10%
- (c) 12%
- (d) 16%
- (e) 15%

Q7. Difference between perimeter of two rectangles is 8 cm. If breadth of both rectangle is 16 cm and length are in the ratio of 7 : 6 then find the total surface area of cylinder whose radius is half of the length of larger rectangle and height equal to length of smaller rectangle?

- (a) 3344 cm^2
- (b) 3668 cm^2
- (c) 3444 cm^2
- (d) 3468 cm^2
- (e) 3462 cm^2

Q8. A cylindrical jar, whose base has a radius of 15 cm is filled with water up to a height of 20 cm. A solid iron spherical ball of radius 10 cm is dropped in the jar to submerge completely in water. Find the increase in the level of water (in cm) is

- (a) $5\frac{17}{27}$
- (b) $5\frac{5}{7}$
- (c) $5\frac{8}{9}$
- (d) $5\frac{25}{27}$
- (e) $5\frac{7}{27}$

Q9. The difference between the outside and inside surface of a cylindrical metallic pipe, 14 cm long, is 44 cm^2 . If the pipe is made of 99 cm^3 of metal. Find the outer radius of the pipe?

- (a) 2 cm
- (b) 2.5 cm
- (c) 4 cm

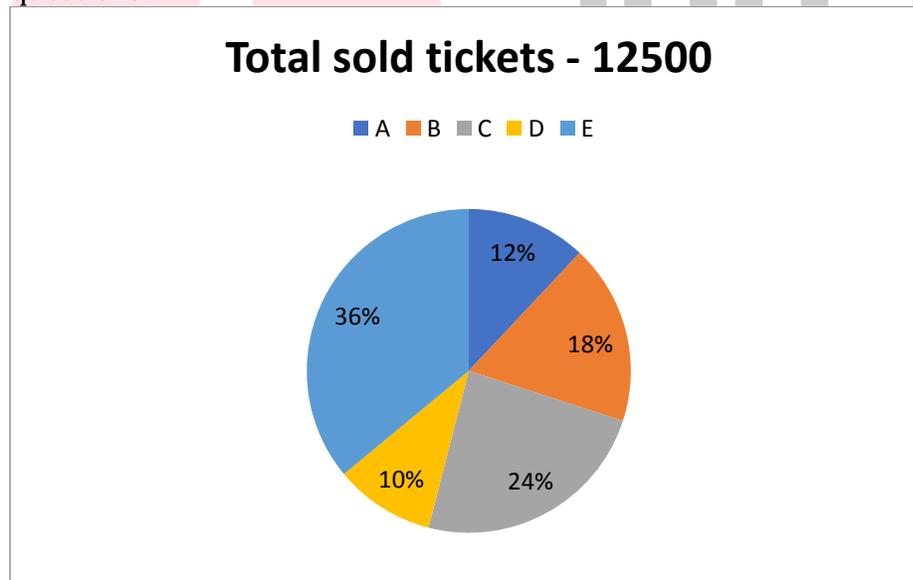
- (d) 5 cm
(e) 3 cm

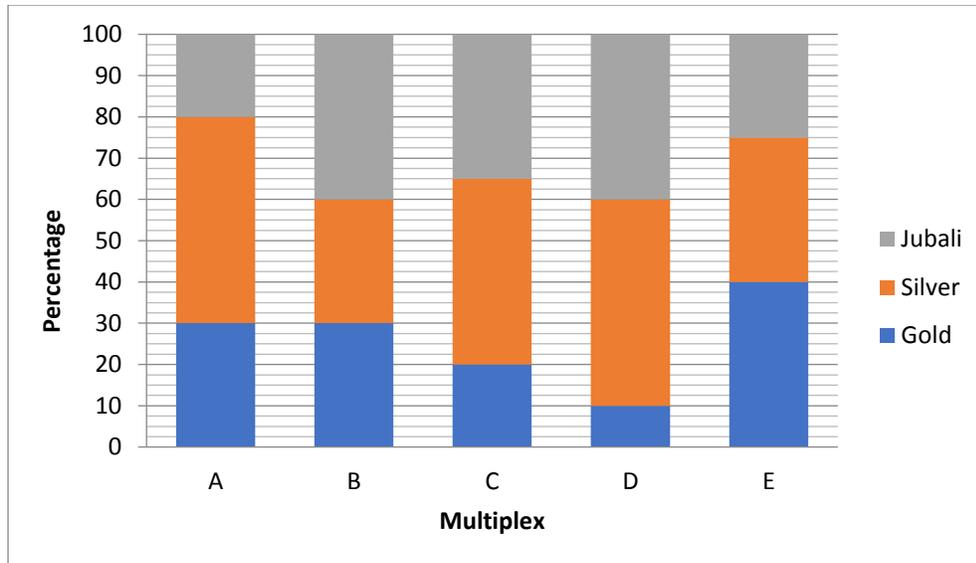
Q10. The dimensions of a field are 20 m and 9 m. A pit 10 m long, 4.5 m wide and 3 m deep is dug in one corner of the field and the earth (mud) removed has been evenly spread over the remaining area of the field. What will be the rise the height of field as a result of this operation ?

- (a) 1.5 m
(b) 2 m
(c) 3 m
(d) 4m
(e) 1 m



Direction (11 – 15): Given below pie graph shows total number of tickets of 'Sanju' movie sold by five multiplex on opening days, while bar graph shows percentage distribution of three different type of class ticket sold by each store. Read given data and answer the questions:





Q11. Total Jubali class ticket sold by multiplex C & E together is what percent more than total Gold class ticket sold by multiplex A & C together?

- (a) $105\frac{1}{7}\%$
 (b) $102\frac{1}{7}\%$
 (c) $100\frac{1}{7}\%$
 (d) $97\frac{1}{7}\%$
 (e) $107\frac{1}{7}\%$

Q12. Find difference between total Silver class ticket sold by multiplex A, C & E together and total silver gold class ticket sold by multiplex B, C & E together?

- (a) 400
 (b) 200
 (c) 650
 (d) 600
 (e) 450

Q13. Find sum of average number of Jubli class ticket sold by multiplex B & C and average number of Gold class ticket sold by multiplex C & E?

- (a) 2075
 (b) 2175
 (c) 2275
 (d) 2375
 (e) 2205

Q14. Total Silver class tickets sold by multiplex A & D is what percent less than total Gold class ticket sold by B & E?

- (a) $42\frac{4}{9}\%$

- (b) $40\frac{4}{9}\%$
 (c) $38\frac{4}{9}\%$
 (d) $44\frac{4}{9}\%$
 (e) $36\frac{4}{9}\%$

Q15. The ratio of price of one Gold ticket in multiplex D, C & A is 10 : 6 : 7, and all three multiplex earned Rs. 40000 from the selling of all Gold Class tickets. Find difference between price of one Gold ticket in Multiplex A and D?

- (a) 10 Rs.
 (b) 15 Rs.
 (c) 5 Rs.
 (d) 20 Rs.
 (e) 25 Rs.



Solutions

S1. Ans.(c)

Sol.

Let the cost price of both the articles is x & y respectively.

If he earn profit of 12.5% on x and sold second item on profit of 20%.

ATQ,

$$x \left[\frac{100+12.5}{100} \right] = y + y \times \frac{20}{100}$$

$$x \times \frac{9}{8} = \frac{6y}{5}$$

$$15x = 16y \quad \dots(i)$$

Also,

Difference of profit of two items is given 10 and we don't know which one is greater, there for two cases are possible...

First when 12.5% profit on cost price x is greater

$$\left(\frac{9x}{8} - x \right) - \left(\frac{6y}{5} - y \right) = 10$$

$$\frac{1}{8}x - \frac{1y}{5} = 10$$

$$5x - 8y = 40$$

Hence it can't be solved with equation (i).

Now assume 20% profit on cost price Y is greater

$$\frac{1}{5}y - \frac{1}{8}x = 10$$

$$8y - 5x = 400$$

On solving we will get

$$y = 150$$

$$x = 160$$

Hence total CP of both articles = Rs. 310.

S2. Ans.(a)

Sol.

Ramu's discount:

$$8\% \text{ on } 8000 = 640$$

$$5\% \text{ on } 12000 = 600$$

$$3\% \text{ on } 16000 = 480$$

$$\text{Total} = 1720 \text{ on } 36000$$

$$\text{Final S.P. for Ramu} = 34280$$

Shyamu's Discount:

$$7\% \text{ on } 12000 = 840$$

$$6\% \text{ on } 8000 = 480$$

$$5\% \text{ on } 16000 = 800$$

$$\text{Total} = 2120 \text{ on } 36000$$

$$\text{Final SP for Shyamu} = 33880$$

$$\text{C.P. for both of them} = 36000 \times \frac{100}{125} = 28800$$

Ramu has greater Profit

$$\text{Profit\% for Ramu} = \frac{(34280 - 28800)}{28800} \times 100 = 19\% \text{ (approx.)}$$

S3. Ans.(a)

Sol.

Ramu's Discount:

$$8\% \text{ on } 8000 = 640$$

$$4\% \text{ on } 12000 = 480$$

$$1\% \text{ on } 16000 = 160$$

$$\text{Total} = 1280 \text{ on } 36000$$

$$\text{Final SP for him} = 36000 - 1280 = 34720$$

$$\text{Profit} = 34720 - 28800 = 5920$$

S4. Ans.(e)

Sol.

Let cost price of each article is 100y

Least profit percent = x

$$\text{2nd profit percent} = x + \frac{x}{2} = \frac{3x}{2}$$

$$\text{3rd profit percent} = \frac{3x}{2} + \frac{x}{2} = 2x$$

Selling prices

$$\text{Least} = 100y + xy$$

Second highest $\rightarrow 100y + \frac{3}{2}xy$

Highest $\rightarrow 100y + 2xy$

ATQ,

$$100y + xy + 100y + \frac{3}{2}xy + 100y + 2xy = 1035$$

$$300y + 4.5xy = 1035 \dots(i)$$

Divide by 3 eq. (i)

$$100y + 1.5xy = 345$$

Second highest selling price = 345

S5. Ans.(a)

Sol.

$$\text{Profit percent} = \frac{9-8}{8} \times 100 = 12.5\%$$

$$\text{Profit} = \frac{12.5}{25} \times 4 = 2 \text{ Rs.}$$

$$\text{Selling price} \rightarrow 9 \times 2 = 18 \text{ Rs.}$$

S6. Ans.(c)

Sol.

Let marked price of bike = 100x Rs.

Selling price for store A

$$= 100x \times \frac{(100-30)}{100}$$

$$= 70x$$

$$\text{Given, } 70x = 49000$$

$$x = 700$$

marked price of bike = 70000 Rs.

ATQ—

Selling price of bike in store B=

$$\text{Marked price of bike} \times \frac{(100-d)}{100} \times \frac{(100-8)}{10} = \text{selling price of bike in store A} + 7672$$

$$70000 \times \frac{(100-d)}{100} \times \frac{(100-8)}{10} = (49000 + 7672)$$

$$644d = 64400 - 56672$$

$$d = \frac{7728}{644}$$

$$d = 12\%$$

S7. Ans.(a)

Sol.

Lets length of two rectangles be 7x cm 6x cm respectively

ATQ

$$2(7x + 16) - 2(6x + 16) = 8 \text{ cm}$$

$$2x = 8 \text{ cm}$$

$$x = 4 \text{ cm}$$

$$\text{Radius of cylinder} = \frac{4 \times 7}{2} = 14 \text{ cm}$$

$$\text{Height of cylinder} = 4 \times 6 = 24 \text{ cm}$$

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$$\begin{aligned}
 \text{Total surface area of cylinder} &= 2\pi r (r + h) \\
 &= 2 \times \frac{22}{7} \times 14(14 + 24) \\
 &= 88 \times 38 \\
 &= 3344 \text{ cm}^2
 \end{aligned}$$

S8. Ans.(d)

Sol.

Let level of water will be increased by h.

$$\begin{aligned}
 \pi \times (15)^2 \times h &= \frac{4}{3} \pi (10)^3 \\
 \Rightarrow h &= \frac{4}{3} \times \frac{10 \times 10 \times 10}{15 \times 15} \\
 &= 5 \frac{25}{27} \text{ cm}
 \end{aligned}$$



S9. Ans.(b)

Sol. Let R_1 and R_2 is the inner and outer radius of the metallic pipe.

Height = 14 cm.

Difference b/w C.S.A of Inner and outer side of cylinder

$$\begin{aligned}
 &= 2\pi R_2 h - 2\pi R_1 h \\
 &= 2\pi \times 14(R_2 - R_1) = 44
 \end{aligned}$$

$$R_2 - R_1 = \frac{1}{2} \text{ cm} \quad \text{_____ (1)}$$

$$\text{Volume of pipe} = 99 \text{ cm}^3 = \pi R_2^2 h - \pi R_1^2 h$$

$$R_2^2 - R_1^2 = \frac{9}{4}$$

$$(R_2 - R_1)(R_2 + R_1) = \frac{9}{4}$$

$$(R_2 + R_1) \frac{1}{2} = \frac{9}{4}$$

$$R_2 + R_1 = \frac{9}{2} \quad \text{_____ (2)}$$

Solving (1) & (2)

$$R_1 = 2 \text{ cm}$$

$$R_2 = 2.5 \text{ cm}$$

S10. Ans.(e)

Sol.

$$\begin{aligned} \text{Volume of earth removed} &= 10 \times 4.5 \times 3 \\ &= 135\text{m}^3 \end{aligned}$$

$$\text{Remaining area} = [20 \times 9 - 10 \times 4.5] = 180 - 45 = 135$$

Let, rise in height be h m

Therefore,

$$h \times 135 = 135$$

$$h = 1\text{m}$$

S11. Ans.(e)

Sol.

Total Jubali class ticket sold by multiplex C & E

$$= 12500 \times \frac{24}{100} \times \frac{35}{100} + 12500 \times \frac{36}{100} \times \frac{25}{100}$$

$$= 1050 + 1125$$

$$= 2175$$

Total gold class ticket sold by multiplex A & C

$$= 12500 \times \frac{12}{100} \times \frac{30}{100} + 12500 \times \frac{24}{100} \times \frac{20}{100}$$

$$= 450 + 600$$

$$= 1050$$

$$\text{Required percentage} = \frac{2175 - 1050}{1050} \times 100$$

$$= 107\frac{1}{7}\%$$

S12. Ans.(d)

Sol.

Total silver class ticket sold by multiplex A, C and E

$$= 12500 \times \frac{12}{100} \times \frac{50}{100} + 12500 \times \frac{36}{100} \times \frac{35}{100} + 12500 \times \frac{24}{100} \times \frac{45}{100}$$

$$= 750 + 1350 + 1575$$

$$= 3675$$

Total gold class ticket sold by multiplex B, C & E

$$= 12500 \times \frac{18}{100} \times \frac{30}{100} + 12500 \times \frac{24}{100} \times \frac{20}{100} + 12500 \times \frac{36}{100} \times \frac{40}{100}$$

$$= 675 + 600 + 1800$$

$$= 3075$$

$$\text{Required difference} = 3675 - 3075$$

$$= 600$$

S13. Ans.(b)

Sol.

Average number of jubali ticket sold by Multiplex B & C

$$\begin{aligned}
 &= \frac{12500 \times \frac{18}{100} \times \frac{40}{100} + 12500 \times \frac{24}{100} \times \frac{35}{100}}{2} \\
 &= \frac{900 + 1050}{2} \\
 &= 975
 \end{aligned}$$

Average number of gold class ticket sold by multiplex C & E

$$\begin{aligned}
 &= \frac{12500 \times \frac{24}{100} \times \frac{20}{100} + 12500 \times \frac{36}{100} \times \frac{40}{100}}{2} \\
 &= \frac{600 + 1800}{2} \\
 &= 1200
 \end{aligned}$$

$$\begin{aligned}
 \text{Required sum} &= 975 + 1200 \\
 &= 2175
 \end{aligned}$$

S14. Ans.(d)

Sol.

Total silver class ticket sold by multiplex A & D

$$\begin{aligned}
 &= 12500 \times \frac{12}{100} \times \frac{50}{100} + 12500 \times \frac{10}{100} \times \frac{50}{100} \\
 &= 750 + 625 \\
 &= 1375
 \end{aligned}$$

Total Gold glass ticket sold by B & E

$$\begin{aligned}
 &= 12500 \times \frac{18}{100} \times \frac{30}{100} + 12500 \times \frac{36}{100} \times \frac{40}{100} \\
 &= 675 + 1800
 \end{aligned}$$

$$= 2475$$

$$\text{Required percentage} = \frac{2475 - 1375}{2475} \times 100$$

$$= \frac{1100}{2475} \times 100$$

$$= 44 \frac{4}{9} \%$$

S15. Ans.(b)

Sol.

Let price of one Gold ticket in multiplex D, C and A be Rs.10x, Rs6x and Rs7x respectively.

Atq,

Total earning = 40000

$$12500 \times \frac{10}{100} \times \frac{10}{100} \times 10x + 12500 \times \frac{24}{100} \times \frac{20}{100} \times 6x + 12500 \times \frac{12}{100} \times \frac{30}{100} \times 7x$$

$$1250x + 3600x + 3150x = 40000$$

$$x = \frac{40000}{8000}$$

$$x = 5 \text{ Rs}$$

Required difference = $5 \times 10 - 5 \times 7$
= 15 Rs.

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