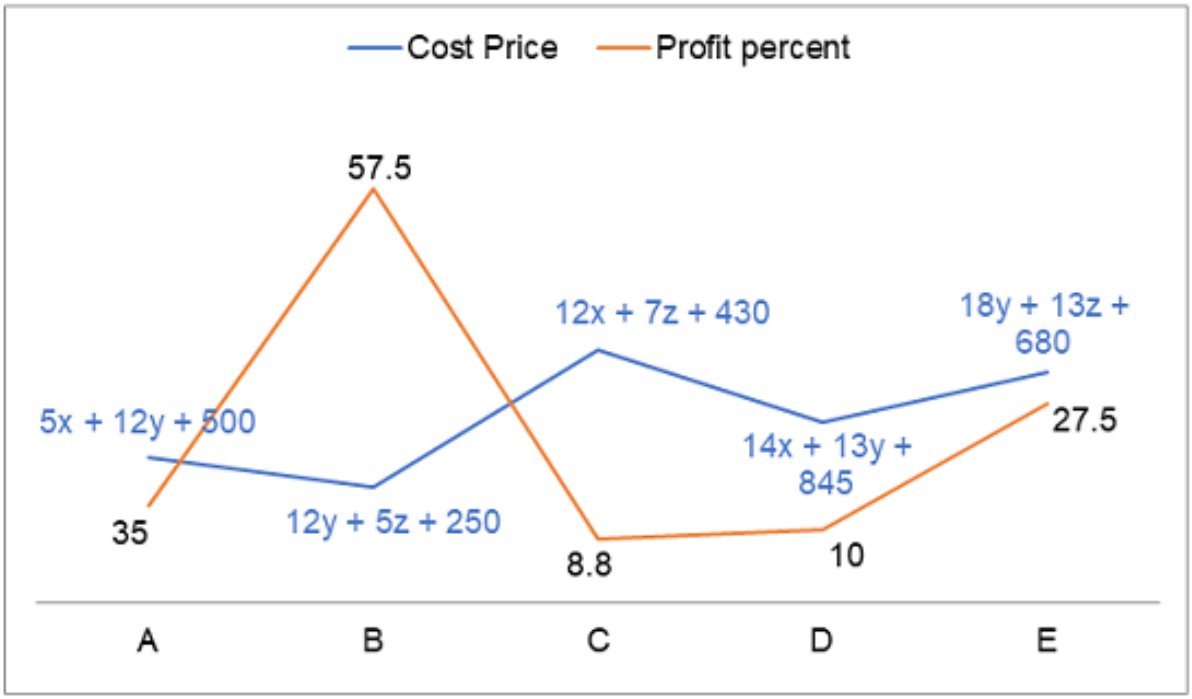
Expected DI & Caselet Questions Based on Profit and Loss for Upcoming mains Exam

DI & CASELETS BASED ON PROFIT & LOSS

Directions (1 – 4): Answer the questions based on the information given below.

The line graph given below shows the cost price of five different articles and profit percent earned by selling the articles.



Added Information:

1. Cost price of article A and article C together is Rs. 4500.
2. Cost price of article B and article D together is Rs. 5100.
3. Cost price of article A and article E together is Rs. Rs. 5200.

1. Shopkeeper sold article D after giving two successive discounts such that the difference between the two successive discount percents is 0.5% and the marked price of the article is Rs. 5000. Find the marked price of another article whose selling price is Rs. 1750 and it is sold at higher of these discounts.

a) Rs. 2500

b) Rs. 2400

c) Rs. 2000

d) Rs. 2750

e) None of these

2. Shopkeeper gave two successive discounts of X% and P% on article C. Find the ratio of value of P to value of X if the marked price of article C is Rs. 4000 and value of X = 15.

a) 5:4

b) 5:2

c) 5:6

d) 4:5

e) None of these

3. Shopkeeper marked article A for Rs. 4500 and sold it after two successive discounts and the sum of the two successive discount percents is 45%. Find the difference between the two successive discount percents offered.

a) 10%

b) 15%

c) 12%

d) 6.5%

e) None of these

4. Shopkeeper sold article B and article E after two successive discounts and marked price of article E is Rs. 2500 more than marked price of article B and total marked price of both the articles is Rs. 9500. If one of the discounts offered on article B and E is 20% and 15%, respectively then find the sum of another discount percents offered on both articles together.

a) 25%

b) 40%

c) 35%

d) 30%

e) None of these

Directions (5 – 9): Study the following information carefully to answer the questions that follow:

Four shopkeepers John, Johny, Jimmy and Jack buy air conditioners (ACs) from the same wholesaler at the same rate. However, this time Jack managed to get a discount of 5% from the wholesaler and got the ACs at the rate of Rs. 28,500 per AC. By selling the ACs, John earns a profit of 15% while Johny earns a profit of 18%. Jimmy marked the price 20% more than the cost price and offered a discount of 10% while Jack marked the price

25% more than the cost price and offered two successive discounts of 10% each.

5. On a particular day, John sold 5 ACs and Jimmy sold 9 ACs. What is the difference between the net profit earned by John and Jimmy on that day?

a) 600
b) 800
c) 900
d) 700
e) None of these

6. What is the difference between the profit percent earned by Johny and Jimmy?

a) 10%
b) 5%
c) 8%
d) 15%
e) None of these

7. If you plan to purchase an air conditioner, you will get the best deal from which of the shopkeepers?

a) John
b) Johny
c) Jimmy
d) Jack
e) None of these

8. If Jimmy sells three ACs on a particular day, how much profit did he earn that day?

a) Rs. 7,900
b) Rs. 7,200
c) Rs. 8,500
d) Rs. 7,800
e) None of these

9. Which shopkeeper will earn the highest profit % on a day if all of them sell 10 ACs each on that day?

a) John
b) Johny
c) Jimmy
d) Jack
e) None of these

Directions (10 – 14): Given table shows the data of price (cost/marked/selling) or percentage (mark-up/discount/profit) of three articles i.e. pen, pencil & box. Data given in integral form is particular price of the article while data in percentage form is percentage as mentioned. Some data are missing which you have to calculate as per the information provided in the question.

NOTE: If value (%) is mentioned in Marked Price then it is percentage by which the article is marked above its cost price. If value (%) is mentioned in Selling Price then it is discount percentage given on the article. If value (%) is mentioned in Cost Price then it is profit percentage earned on the article with reference to cost price (not selling price).

Read the data carefully & answer the questions.

(All prices in Rs.)

Article	Cost Price	Marked Price	Selling Price
Pen	20	---	16 2/3%
Pencil	20%	15	---
Box	---	25%	70

10. If marked price of box is 300% more than cost price of pen then find cost price of box.
a) Rs 62
b) Rs 68
c) Rs 60
d) Rs 64
e) Rs 66

11. What will be the increase in profit/loss percentage if pen is sold at marked price (without offering any discount)? Ratio of selling price of pen to that of box is 5 : 14.
a) 100%
b) 50%
c) 25%
d) 150%
e) 300%

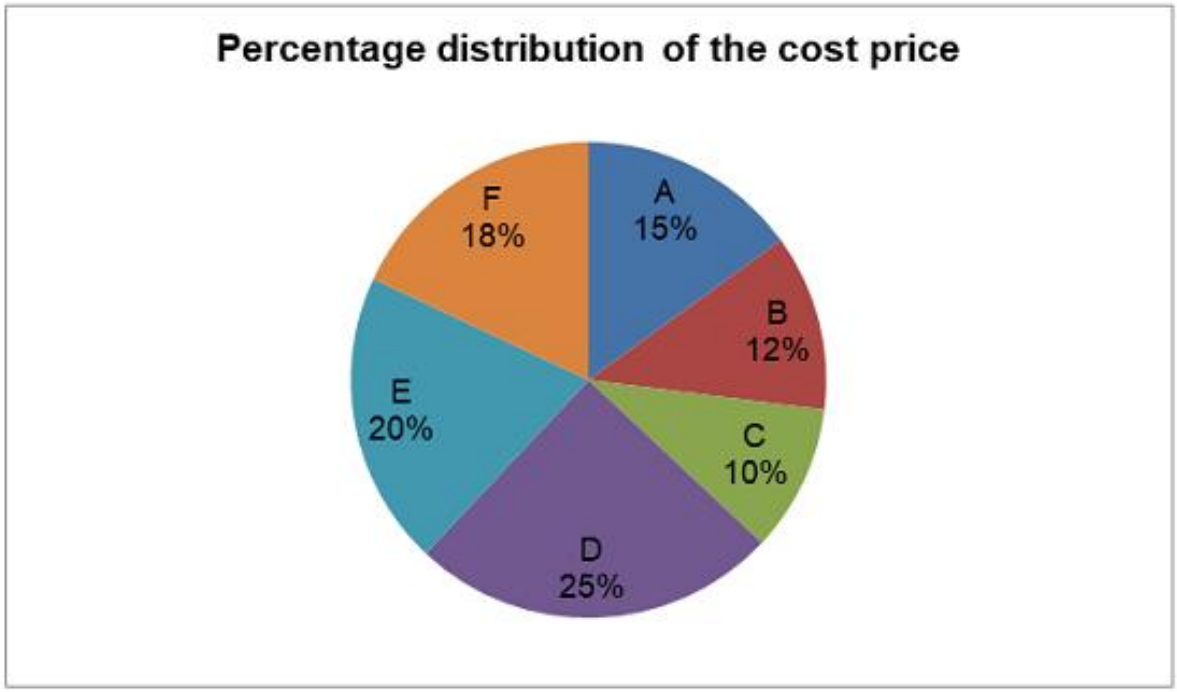
12. What is ratio of cost price of pen to that of pencil if selling price of pencil is 20% of cost price of box and profit percentage of box is same as discount percentage of pen?
a) None of these
b) 2 : 3
c) 2 : 1
d) 4 : 3
e) 5 : 6

13. The cost price of pen, pencil & box is in ratio 2 : 1 : 6 respectively while marked price is in ratio 2 : 1 : 5 respectively. What is ratio of selling price of all three articles (in order used in question).
a) 12 : 15 : 14
b) 25 : 12 : 70
c) Cannot be determined
d) None of these
e) 6 : 3 : 16

14. A child purchased a box and 5 pen & some pencils for the purpose of gifting to his friend. In this transaction, the shopkeeper earned a profit of 21 3/7%. A discount of Rs 5 is given on each pen & box. 20% discount is given on pencil. Find number of pencils purchased. (consider price given of box is of empty box)
a) 4
b) 7
c) 6
d) Cannot be determined
e) 5

Directions (15 – 17): Answer the questions based on the information given below.

The pie chart given below shows the percentage distribution of the cost price of six different items as total cost price of all the six articles together sold by a shopkeeper.



15. If the ratio of the selling price of item B to item F is 3:4, and item B is sold at 35% profit, then find the profit percentage earned by the shopkeeper on item F.

a) 25%

b) 20%

c) 18%

d) 30%

e) 12%

16. If the marked price of item B is Rs. 4140 and it is sold at 15% profit, then find the cost price of item A provided the discount given on item B is 20%.

a) Rs. 2450

b) Rs. 2880

c) Rs. 3600

d) Rs. 3240

e) None of these

17. If the difference between the cost price of item C and E is Rs. 540 and profit earned on item C and E is 20% and 10% respectively, find the difference between the marked price of both items, if the discount given on both items is 20% each.

a) Rs. 675

b) Rs. 525

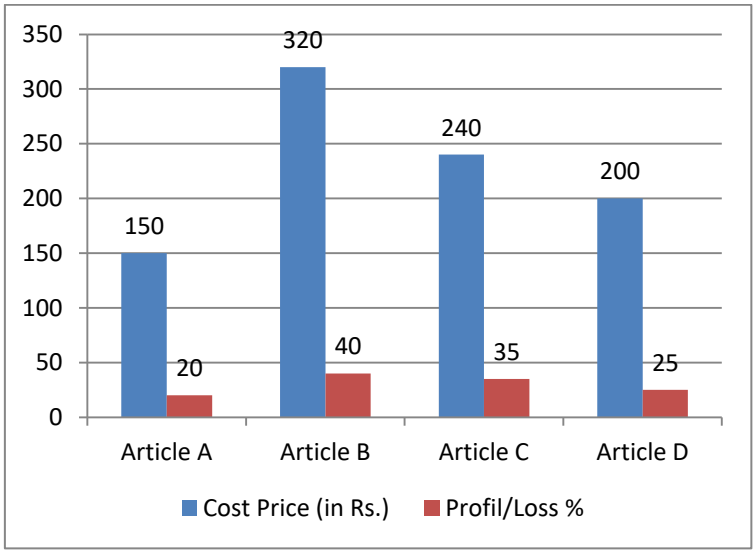
c) Rs. 450

d) Rs. 725

e) None of these

Directions (18 – 22): Study the following bar graph carefully and answer the following questions.

A shopkeeper sells four articles A, B, C and D. The Bar graph shows the Cost price (In Rs.) of the articles and Profit/loss percentage realized by the shopkeeper while selling these articles.



18. Find the total amount received and the gross profit/loss to the shopkeeper if he has sold article C and D at loss and article A and B at profit.

a) Rs. 886 and 2.56% loss

b) Rs. 934 and 2.63% profit

c) Rs. 846 and 7.03% loss

d) Rs. 974 and 7.03% profit

e) None of these

19. If 35 units of the article A are sold at loss and 48 units of article C are sold at profit then find the overall profit/loss percentage.

a) 15.09%

b) 18.47%

c) 19.84%

d) 17.78%

e) None of these

20. If the selling price of article A is 72% of the selling price of article D then which of the following is correct?

a) A is sold at profit and D is sold at loss.

b) Both A and D are sold at loss.

c) A is sold at loss and D is sold at profit.

d) Both A and D are sold at profit.

e) None of these.

21. If the article B is first sold at loss to one customer at Rs. X and then at profit to another customer at Rs. Y, then find by how much percent Y is greater than X.

a) 233.33%

b) 57.14%

c) 133.33%

d) 33.33%

e) None of these

22. If Article C is sold at loss and its marked price is Rs. 264, then find the difference between percentage discount and percentage markup of the article.

a) 28.4%

b) 36.5%

c) 25%

d) 40.9%

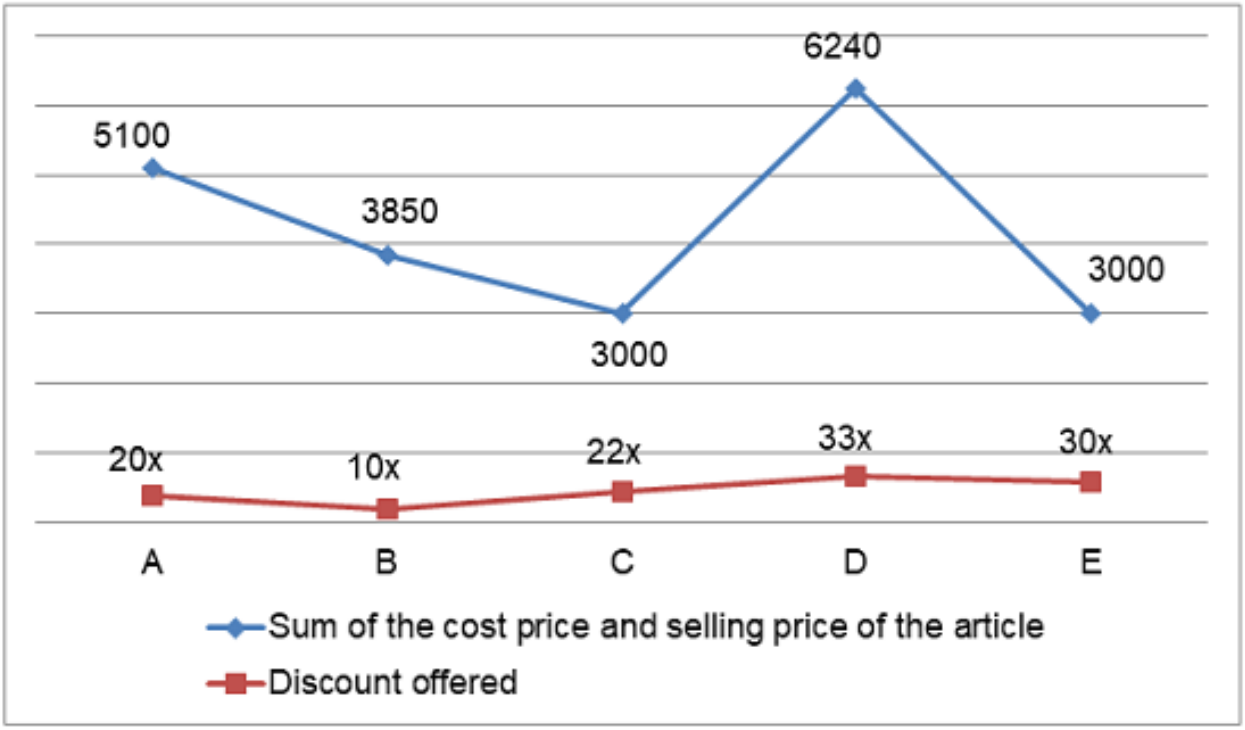
e) 30.9%

Expected DI & Caselet Questions Based on Profit and Loss for Upcoming mains Exam

Directions (23 – 27): Answer the questions based on the information given below.

The given line graph shows the sum of the cost price and selling price, and the discount offered on five different articles.

The sum of the discounts offered on all these articles is Rs. 2300.



23. The selling price of article 'A' is Rs. 100 more than its cost price. If the article 'A' had been marked up by 20% less amount than the original, then how much discount should be offered on the article so that there is a profit of 14%.

a) Rs. 80

b) Rs. 50

c) Rs. 75

d) Rs. 60

e) Rs. 40

24. The selling price of article 'C' is Rs. 200 less than its cost price. If the cost price of the article 'C' had been 25% more and the amount by which article C has been marked up is 15% more than the original, then find the profit/loss percent if the discount offered on the article remained the same.

a) 9.6%

b) 7.4%

c) 8.2%

d) 6.25%

e) 5.8%

25. The cost price of the article 'F' is 2.5 times the discount offered on article 'D'. The sum of the selling price and cost price of article 'F' is equal to that of 'E'. If the discount offered on article 'F' is 25% of the sum of the selling price and cost price of article 'B', then find the amount by which article 'F' is marked up.

a) Rs. 1080.5

b) Rs. 720

c) Rs. 740

d) Rs. 612.5

e) Rs. 662.5

26. The profit earned on article 'D' is Rs. 240. If the discount offered on article D had been Rs. 390 less then what should be the cost price of the article so that the percentage by which article is marked up above its cost price and the selling price remain the same.

a) Rs. 2700

b) Rs. 2500

c) Rs. 3100

d) Rs. 2800

e) Rs. 2400

27. If the article 'B' has been marked up by 20% and then same discount is offered on it then the sum of the selling price and cost price decreases by Rs. 90. Find the percentage by which the article was marked up above its cost price originally.

a) 40%

b) 15%

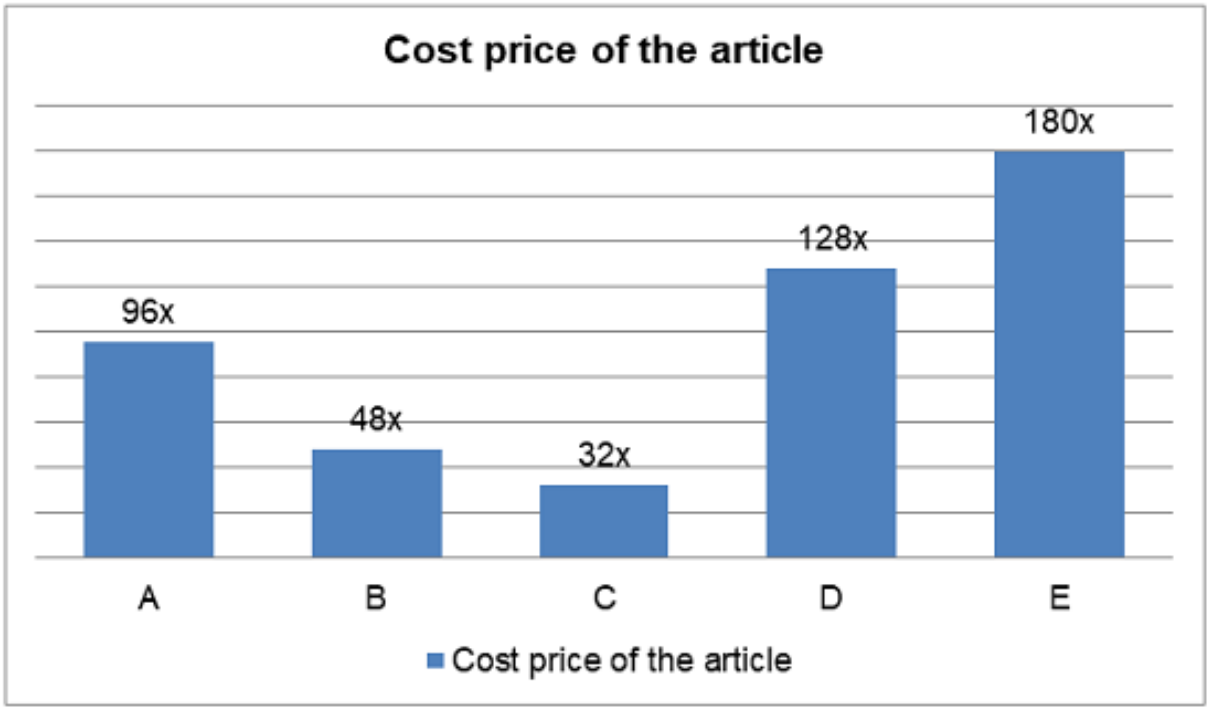
c) 20%

d) 25%

e) 30%

Directions (28 – 32): Answer the questions based on the information given below.

The given bar graph shows the cost price of five different articles. If the cost price is less than Rs. 1500, then it is marked up by 20% and if the cost price is more than Rs. 1500 then it is marked up by 25%. If the marked price of the item is less than Rs. 3500, then the discount offered is 15% and if the marked price is more than Rs. 3500 then the discount offered is 20%. The sum of the cost price of all the articles is Rs. 12100.



28. If the cost price of the article 'D' had been 80% less then find the difference between the original selling price and the new selling price of the article.

a) Rs. 2432.8

b) Rs. 2642.4

c) Rs. 2839.6

d) Rs. 2547.2

e) Rs. 2748.6

29. If the selling price of the article 'B' had been Rs. 680 more and the discount percentage remained the same, then find the amount by which article 'B' is marked up provided the article is sold at 75% profit.

a) Rs. 1324

b) Rs. 1260

c) Rs. 1152

d) Rs. 1458

e) Rs. 1032

30. If the article 'A' has been marked up by 30% and same discount amount was offered on it as before, then find the difference between the new selling price and the original selling price.

a) Rs. 135

b) Rs. 120

c) Rs. 180

d) Rs. 175

e) Rs. 200

31. Due to some breakage, the shopkeeper had to spent Rs. 250 on article 'C' and then marked it up above its effective cost price and provided discount, by same percentages. The new selling price is how much percent more/less than the original selling price.

a) 31.25%

b) 42.75%

c) 28.45%

d) 30.15%

e) 25.85%

32. If the article 'E' had been sold at a loss of 20%, then find the discount percentage offered on it, given the article is marked up above its cost price by the same percentage.

a) 52%

b) 24%

c) 42%

d) 36%

e) 32%

Directions (33 – 37): A fruit seller sells apples, bananas and oranges for five days in a week. The selling price of the fruits per kg varies daily. On Monday, he sells apples for Rs. 40 per kg, whereas banana is sold for Rs. 12 per kg and oranges for Rs. 28 per kg. On Tuesday he reduces the price of all fruits except banana by Rs. 2. On Wednesday he increases the price of apples by 5% then that on Monday, price of bananas is increased by Rs. 4 and orange price is decreased by Rs. 4 compared to Tuesday. On Thursday price of apples is reduced to Rs. 32 per kg and bananas is increased to Rs. 24 per kg, the price of orange stays the same as the previous day. On Friday the price of apples and banana both become Rs. 30 per kg and oranges are sold for Rs. 34 per kg.

33. What is the profit percentage he gained by selling eight kg of apples, six kg oranges and seven kg bananas on Tuesday if the CP of apples, oranges and banana is Rs. 20 per kg, Rs. 12 per kg and Rs. 6 per kg?

a) 98.54%

b) 74.65%

c) 92.31%

d) 78.45%

e) None of the above

34. How much money he earned by selling three kg of apples, five kg of oranges and ten kg of bananas on Wednesday?
a) Rs. 426
b) Rs. 396
c) Rs. 400
d) Rs. 386
e) None of the above

35. If he sells twelve kg of apples, eighteen kg of bananas and sixteen kg of oranges on Wednesday as well on Thursday, which day will he earn more and by how much?
a) On Wednesday by Rs. 24
b) On Thursday by Rs. 24
c) On Wednesday by Rs. 36
d) On Thursday by Rs. 36
e) None of the above

36. He sold ten kg of apples, eight kg of bananas and four kg of oranges, both on Monday and Friday each, what is the total amount he earned?
a) Rs. 956
b) Rs. 987
c) Rs. 1,124
d) Rs. 1,198
e) None of the above

37. If the CP of apples, oranges and banana is Rs. 20 per kg, Rs. 12 per kg and Rs. 6 per kg, then on which day will he earn second highest by selling six kg apples, four kg bananas and seven kg oranges?
a) Monday
b) Tuesday
c) Wednesday
d) Thursday
e) Friday

Directions (38 – 39): Answer the questions based on the information given below.

A sale is conducted by a shopkeeper where he sells three types of jacket i.e. M, N and O. The marked price of the jackets M, N, and O is 30%, 40% and 60% more than the respective cost price of the jacket. The ratio of the cost price of jacket M, N and O is 6:8:5 respectively and the discount given on the marked price of jacket M, N and O is 15%, 20% and 30% respectively.

38. If a girl purchased a jacket M and two jacket O, the total profit earned by the shopkeeper is Rs. 366, find the cost price of a jacket O.
a) Rs. 1800
b) Rs. 1600
c) Rs. 1200
d) Rs. 1000
e) Rs. 1400

39. If the marked price of jacket N is Rs. 850 more than the marked price of jacket M, then find the selling price of jacket O.
a) Rs. 1240
b) Rs. 1400
c) Rs. 1350
d) Rs. 1620
e) None of these

Direction (40 – 44): Study the table carefully and answer the following question:-

In Spencers Lucknow, there was season sale. Cost price, selling price, discount and marked price is given. Read the information given and answer the question accordingly:-

Profit	Cost Price	Marked Price	Discount	
			I	II
I	…….	500	15%	10%
II	300	…..	20%	15%
III	……	400	15%	15%
IV	……	400	10%	8%
V	300	500	10%	10%

If a person bought more than 5 quantities of same article there was a successive discount of 10%

[You can use data calculated in previous question to answer the following question]

40. What could have been the cost price of article I. If profit earned by Spencers was 20% after giving two given successive discounts. [No G.S.T. Paid]

a) Rs. 318.75

b) Rs. 420

c) Rs. 290

d) Rs. 305

e) Rs. 280

41. What should be the marked price of article II to earn a profit of 20% after giving the discounts (nearest to rupee). [No G.S.T.]

a) Rs. 500

b) Rs. 490

c) Rs. 530

d) Rs. 480

e) Rs. 550

42. If a person bought 7 quantities of article II and 6 quantities article III. What was his billing amount, if GST paid was 12% (Nearest of Rupees)?

a) Rs. 4000

b) Rs. 4296

c) Rs. 4444

d) Rs. 4500

e) Rs. 4250

43. If Yash bought 4 quantities of article IV and 6 quantities of article V from the Spencers and sold them to Shubham at M.P. (Without any discount). Find his profit percentage on overall transaction? [No GST is paid]

a) 35%

b) 42%

c) 32%

d) 38%

e) None of these

44. Find the Cost price of article IV, if Spencers earned a profit of 25% on selling it (Nearest to Rupee) [NO G.S.T. Paid]

a) Rs. 300

b) Rs. 265

c) Rs. 305

d) Rs. 285

e) Rs. 350

Directions (45 – 46): An article listed at Rs. 800 is sold at successive discount of 25% and 15%. The buyer desires to sell it at a profit of 20% after allowing a 10% discount.

Item	Cost Price (in Rs.)	Marked Price (in Rs.)	% discount	% Profit	Selling Price (in Rs.)
A	–	–	10%	–	180
B	–	–	10%	–	–
C	110	–	5%	29(6/11)%	–
D	300	400	–	–	340
E	–	500	–	–	–

45. What will be the difference between discount of 40% on the list price (Calculated in the previous question) and the two successive discounts of 25% and 15% on the same price?

a) Rs. 75

b) Rs. 60

c) Rs. 80

d) Rs. 25.5

e) Rs. 47

46. What would be the list price of the item sold by buyer?

a) 620

b) 600

c) 640

d) 660

e) 680

Directions (47 – 50): In the table below data related to five items A,B,C,D and E are given. Cost Price(in Rupees), Marked Price(in Rupees), Selling Price(in Rupees) , Discount percentage and Profit percentage of some items are given. Some values are missing in the table. Find the values on the basis of given information and answer accordingly.

47. If the marked price of item B is Rs 100 more than the marked price of item A. Then find the Selling price of item B.

A) Rs 250

B) Rs 270

C) RS 300

D) Rs 280

E) Cannot be determined

48. The cost price of item A is how much less than its marked price(in Rupees) if the profit % after selling item A is double the % discount offered on Item A.

A) Rs 60

B) Rs 55

C) Rs 45

D) Rs 40

E) Rs 50

49. Find the difference between Marked Price and Selling Price of item C.

A) Rs 7.5

B) Rs 8

C) Rs 10

D) Rs 50

E) Rs 5

50. Find the profit % of item E if the % discount od item E = % discount of item C and the Cost Price of E is 1.5 times the cost price of Item D.

A) 5%

B) 6%

C) 5(5/9)%

D) 6(1/3) %

E) None of these

Detailed Explanations

(1 – 4): Common Explanation:

5x + 12y + 500 + 12x + 7z + 430 = 4500

17x + 12y + 7z =

3570……(1)

12y + 5z + 250 + 14x + 13y + 845 = 5100

14x + 25y + 5z =

4005…….(2)

5x + 12y + 500 + 18y + 13z + 680 = 5200

5x + 30y + 13z =

4020……..(3)

Solving equations (1), (2) and (3), we get

x = 120, y = 75 and z = 90

Cost price of article A = 5 × 120 + 12 × 75 + 500 = Rs. 2000

Cost price of article B = 12 × 75 + 5 × 90 + 250 = Rs. 1600

Cost price of article C = 12 × 120 + 7 × 90 + 430 = Rs. 2500

Cost price of article D = 14 × 120 + 13 × 75 + 845 = Rs. 3500

Cost price of article E = 18 × 75 + 13 × 90 + 680 = Rs. 3200

Articles	Cost Price	Selling Price
A	2000	1.35 × 2000 = 2700
B	1600	1.575 × 1600 = 2520
C	2500	1.088 × 2500 = 2720
D	3500	1.1 × 3500 = 3850
E	3200	1.275 × 3200 = 4080

1. Answer: C)

Let one of the discount is x% and another discount is (x – 0.5)%

According to question,

5000 × (100 – x)/100 × {100 – (x – 0.5)}/100 = 3850

(100 – x) × (100.5 – x) = 3850/0.5

(100 – x) × (100.5 – x) = 7700

$10050 – 100.5x + x^2 – 100x = 7700$

$x^2 – 200.5x + 2350 = 0$

x = 188 or x = 12.5

Since, discount cannot be more than 100% so, x = 12.5%.

Desired marked price = 1750/0.875 = Rs. 2000

2. Answer: E)

According to question,

4000 × (100 – 15)/100 × (100 – P)/100 = 2720

0.4 × 85 × (100 – P) = 2720

100 – P = 80

P = 20

Desired ratio = 20:15 = 4:3

3. Answer: E)

Let one of the discount is P%.

Another discount = (45 – P)%

According to question,

4500 × (100 – P)/100 × {100 – (45 – P)}/100 = 2700

0.45 × (100 – P) × (55 + P) = 2700

(100 – P) × (55 + P) = 6000

5500 – 55P – P^2 + 100P = 6000

P^2 – 45P + 500 = 0

P = 25 or P = 20

So, desired difference = 25 – 20 = 5

4. Answer: D)

Marked price of article B = (9500 – 2500)/2 = Rs. 3500

Marked price of article A = 9500 – 3500 = Rs. 6000

Let another discount offered on article B and E is R% and S% respectively.

According to question,

3500 × (100 – 20)/100 × (100 – R)/100 = 2520

0.35 × 80 × (100 – R) = 2520

100 – R = 90

R = 10%

And, 6000 × (100 – 15)/100 × (100 – S)/100 = 4080

0.6 × 85 × (100 – S) = 4080

100 – S = 80

S = 20%

Desired answer = 10% + 20% = 30%

5. Answer: C)

Profit earned by John by selling one AC = Rs. 34,500 – Rs. 30,000 = Rs. 4,500

Profit earned by John by selling 5 ACs = Rs. 4,500 × 4 = Rs. 22,500

Profit earned by Jimmy by selling one AC = Rs. 32,400 – Rs. 30,000 = Rs. 2,400

Profit earned by Jimmy by selling 9 ACs = Rs. 2,400 × 9 = Rs. 21,600

∴ Required difference = Rs. 22,500 – Rs. 21,600 = **Rs. 900**

6. Answer: A)

Cost price for Jack = Rs. 28,500

∴ CP for John, Johny and Jimmy = Rs. 28,500 × 100/95 = Rs. 30,000 (Since Jack got 5% discount)

For Johny,

Profit = 18% (given)

For Jimmy,

Cost Price = Rs. 30000

MP = 30,000 × 120/100 = 36,000.

SP = 36,000 × 90/100 = Rs. 32,400.

Profit % = [(32400 – 30000)/30000] × 100 = 8%

∴ Required difference = (18 – 8)% = **10%**

7. Answer: D)

Cost price for Jack = Rs. 28,500

∴ CP for John, Johny and Jimmy = Rs. 28,500 × 100/95 = Rs. 30,000 (Since Jack got 5% discount)

For John,

Cost Price = Rs. 30000

Profit % = 15%

Selling Price = 30000 × (115/100) = Rs. 34500

For Johny,

Cost price = Rs. 30000

Profit % = 18%

Selling price = 30000 × (118/100) = Rs. 35400

For Jimmy,

Cost price = Rs. 30000

Profit % = [(32400 – 30000)/30000] × 100 = 8%

Marked price = 30000 × (120/100) = Rs. 36000

Discount% = 2 successive discounts of 10% each

Selling price = 36000 × (90/100) × (90/100) = 32400

For Jack,

Cost price = Rs. 28500

Profit % = [(28856.25 – 28500/28500] × 100 = 1.25%

Marked price = 28500 × (125/100) = Rs. 35625

Discount% = 10%

Selling price = 35625 × (90/100) = 28856.25

Hence, we can get the best deal from **Jack.**

8. Answer: B)

For Jimmy,

Cost price = Rs. 30000

Profit % = [(32400 – 30000)/30000] × 100 = 8%

Marked price = 30000 × (120/100) = Rs. 36000

Discount % = 2 successive discounts of 10% each

Selling price = 36000 × (90/100) × (90/100) = 32400

Profit = Rs. 32,400 – Rs. 30,000 = 2,400

∴ Profit for three ACs = Rs. 2,400 × 3 = **Rs. 7200**

9. Answer: B)

John's profit % = 15% (given)

Johny's profit % = 18% (given)

Jimmy's profit % = (32400 – 30000)/30000 × 100 = 8%

Jack's profit = (28,856.25 – 28500)/28500 × 100 = 1.25% (approx.)

Hence, **Johny** earned the highest profit%.

Note: Since % profit is asked, answer will be the same for any number of ACs.

10. Answer: D)

$\text{MP (box)} = \frac{400}{100} \times 20 = Rs\ 80$

$\text{CP (box)} = \frac{100}{125} \times 80 = Rs\ 64$

11. Answer: A)

$\text{selling price of pen} = \frac{5}{14} \times 70 = Rs\ 25$

$\text{MP (pen)} = \frac{6}{5} \times 25 = Rs\ 30$

$\text{Actual profit\%} = \frac{25-20}{20} \times 100 = 25\%$

$\text{New profit \% (when sold at MP)} = \frac{30-20}{20} \times 100 = 50\%$

$\text{Required \%} = \frac{50-25}{25} \times 100 = 100\%$

12. Answer: C)

$\text{profit \% (box)} = 16\frac{2}{3}\% = 1/6$

$\text{CP (box)} = \frac{6}{7} \times 70 = Rs\ 60$

$\text{SP (pencil)} = \frac{20}{100} \times 60 = Rs\ 12$

$\text{CP (pencil)} = \frac{100}{120} \times 12 = Rs\ 10$

$\text{Required ratio} = 20 : 10 = 2 : 1$

13. Answer: B)

$\text{CP (pencil)} = \frac{1}{2} \times 20 = Rs\ 10$

$\text{CP (box)} = \frac{6}{2} \times 20 = Rs\ 60$

$\text{MP (pen)} = \frac{2}{1} \times 15 = Rs\ 30$

$\text{SP (pen)} = \frac{5}{6} \times 30 = Rs\ 25$

$\text{SP (pencil)} = \frac{120}{100} \times 10 = Rs\ 12$

$\text{Required ratio} = 25 : 12 : 70$

14. Answer: E)

$\text{MP (box)} = 70 + 5 = \text{Rs } 75$

$\text{CP (box)} = \frac{100}{125} \times 75 = Rs\ 60$

$\text{SP (pen)} = \frac{5}{1} \times 5 = Rs\ 25$

$\text{SP (pencil)} = \frac{80}{100} \times 15 = Rs\ 12$

$\text{CP (pencil)} = \frac{100}{120} \times 12 = Rs\ 10$

Let pencils purchased be 'x'

Total CP = 10x + 100 + 60 = Rs (160 + 10x)

Total SP = 125 + 12x + 70 = Rs (195 + 12x)

ATQ, $\frac{195+12x-160-10x}{160+10x} \times 100 = \frac{150}{7}$

x = 5

pencils purchased = 5

15. Answer: B)

Let the total cost price of all the items = Rs. x

Profit percentage on item F = a%

According to the question,

(x × 12% × 135%):[x × 18 × (100 + a)%] = 3:4

120 = 100 + a

a = 20%

16. Answer: C)

Marked price of item B = Rs. 4140

Cost price of item B = 4140 × 80% × 100/115 = Rs. 2880

Cost price of item A = 2880/12 × 15 = Rs. 3600

17. Answer: A)

Let the total cost price of the items = Rs. x

According to the question,

x × 20% - x × 10% = 540

x = Rs. 5400

Cost price of item C = 5400 × 10% = Rs. 540

Cost price of item E = 5400 × 20% = Rs. 1080

Required difference = 1080 × 110% × 100/80 - 540 × 120% × 100/80

= 1485 – 810

= Rs. 675

18. Answer: B)

Since articles A and B are sold at profit;

Amount received while selling article A = 150 × 1.2 = Rs. 180

Amount received while selling article B = 320 × 1.4 = Rs. 448

Since articles C and D are sold at loss;

Amount received while selling article C = 240 × 0.65 = Rs. 156

Amount received while selling article D = 200 × 0.75 = Rs. 150

∴ Total amount received = 180 + 448 + 156 + 150 = Rs. 934

Since Total cost price of all the articles = 150 + 320 + 240 + 200 = Rs. 910

∴ Gross profit percentage = (934 – 910)/910 = 2.63%

19. Answer: D)

Total cost price of 35 units of article A and 48 units of article C = 150 × 35 + 240 × 48 = Rs. 16770

Since article A is sold at loss;

∴ Selling price of A = 150 × 0.8 = Rs. 120

Since article C is sold at profit;

∴ Selling price of C = 240 × 1.35 = Rs. 324

Total selling price of 35 number of article A and 48 number of article C = 120 × 35 + 324 × 48 = Rs. 19752

∴ Overall profit percentage = (19752 – 16770)/16770 = 17.78%

20. Answer: D)

We have to solve this question with hit and trial method;

Checking with option 4;

If both A and D are sold at profit;

Selling price of A = 150 × 1.2 = Rs. 180

And selling price of D = 200 × 1.25 = Rs. 250

Required percentage = (180/250) × 100 = 72%

∴ Option 4 satisfies the given statement

21. Answer: C)

Cost Price of article B = Rs 320 and Profit/loss percentage = 40%

When sold at loss;

∴ X = 320 × 0.6 = Rs. 192

When sold at profit;

∴ Y = 320 × 1.4 = Rs. 448

∴ Required percentage = (448 – 192)/192 = 133.33%

∴ Y is 133.33% more than X

22. Answer: E)

Since Article C is sold at loss of 35% and Cost price is Rs. 240;

∴ Selling price of article C = 240 × 0.65 = Rs. 156

Given the marked price of article C = Rs. 264

∴ Percentage discount = (264 – 156)/264 = 40.9%

From the bar graph: Cost price of article C = Rs. 240 and marked price is Rs. 264;

∴ Percentage markup = (264 – 240)/240 = 10%

∴ Difference between percentage discount and percentage markup of the article = 40.9 – 10 = 30.9%

(23 – 27): Common Explanation:

20x + 10x + 22x + 33x + 30x = 2300

Or, 115x = 2300

Or, x = 20

	Discount offered (in Rs.)
A	20x = 400
B	10x = 200
C	22x = 440
D	33x = 660
E	30x = 600

Let the cost price of the article be Rs. x

Therefore, selling price of the article = Rs. (x + 100)

According to the question,

(x + x + 100) = 5100

Or, 2x = 5000

Or, x = Rs. 2500

Therefore, cost price of the article = Rs. 2500

Selling price of the article = (2500 + 100) = Rs. 2600

Therefore, marked price of the article 'A' = (2600 + 400) = Rs. 3000

Amount by which article 'A' is marked up = (3000 – 2500) = Rs. 500

23. Answer: B)

According to the question,

New amount by which article 'A' is marked up = 0.8 × 500 = Rs. 400

New marked price of the article = 2500 + 400 = Rs. 2900

New selling price = 1.14 × 2500 = Rs. 2850

Required discount = 2900 – 2850 = Rs. 50

24. Answer: C)

According to the question,

New cost price of the article = 1.25 × 1600 = Rs. 2000

New amount by which the article is marked up = 1.15 × 240 = Rs. 276

New marked price of the article = 2000 + 276 = Rs. 2276

New selling price = 2276 – 440 = Rs. 1836

Required loss percentage = {(2000 – 1836)/2000} × 100 = 8.2%

25. Answer: E)

Cost price of article 'F' = 2.5 × 660 = Rs. 1650

Selling price of article 'F' = 3000 – 1650 = Rs. 1350

Discount offered on the article = 0.25 × 3850 = Rs. 962.5

Therefore, marked price of the article = 1350 + 962.5 = Rs. 2312.5

Amount by which article 'F' is marked up = 2312.5 – 1650 = Rs. 662.5

26. Answer: A)

Let the cost price of article 'D' be Rs. x

Therefore, selling price of the article = (x + 240)

According to the question,

(x + 240 + x) = 6240

Or, 2x = 6000

Or, x = 6000/2 = Rs. 3000

Therefore, cost price of the article = Rs. 3000

Selling price of the article = 3000 + 240 = Rs. 3240

Marked price of the article = 3240 + 660 = Rs. 3900

Percentage by which the article is marked above its cost price = {(3900 – 3000)/3000} × 100 = 30%

According to the question,

New discount = 660 – 390 = Rs. Rs. 270

New marked price = 3240 + 270 = Rs. 3510

Required cost price = 3510/1.3 = Rs. 2700

27. Answer: D)

Let the cost price of the article be Rs. x

Therefore, marked price of the article = Rs. 1.2x

Selling price of the article = Rs. (1.2x – 200)

According to the question,

3850 – (x + 1.2x – 200) = 90

Or, 2.2x = 3960

Or, x = 3960/2.2 = Rs. 1800

Therefore, original selling price of the article = 3850 – 1800 = Rs. 2050

Original marked price = 2050 + 200 = Rs. 2250

Percentage by which article is marked up above its cost price = {(2250 – 1800)/1800} × 100 = 25%

(28 – 32): Common Explanation:

According to the question,

96x + 48x + 32x + 128x + 180x = 12100

Or, 484x = 12100

Or, x = 12100/484 = Rs. 25

	Cost price of the article (in Rs.)	Marked price of the article (in Rs.)	Discount offered on the article (in Rs.)	Selling price of the article (in Rs.)
A	96x = 2400	1.25 × 2400 = 3000	0.15 × 3000 = 450	3000 – 450 = 2550
B	48x = 1200	1.2 × 1200 = 1440	0.15 × 1440 = 216	1440 – 216 = 1224
C	32x = 800	1.2 × 800 = 960	0.15 × 960 = 144	960 – 144 = 816
D	128x = 3200	1.25 × 3200 = 4000	0.2 × 4000 = 800	4000 – 800 = 3200
E	180x = 4500	1.25 × 4500 = 5625	0.2 × 5625 = 1125	5625 – 1125 = 4500

28. Answer: D)

New cost price of the article = 0.2 × 3200 = Rs. 640

Therefore, marked price of the article = 1.2 × 640 = Rs. 768

New selling price of the article = 0.85 × 768 = Rs. 652.8

Required difference = 3200 – 652.8 = Rs. 2547.2

29. Answer: C)

New selling price of article 'B' = 1224 + 680 = Rs. 1904

New marked price of the article 'B' = 1904/0.85 = Rs. 2240

New cost price of the article 'B' = 1904/1.75 = Rs. 1088

Amount by which article 'B' is marked up = 2240 – 1088 = Rs. 1152

30. Answer: B)

New marked price of the article 'A' = 1.3 × 2400 = Rs. 3120

New selling price = 3120 – 450 = Rs. 2670

Required difference = 2670 – 2550 = Rs. 120

31. Answer: A)

New cost price of the article = Rs. (800 + 250) = Rs. 1050

New marked price = 1.2 × 1050 = Rs. 1260

New selling price = 0.85 × 1260 = Rs. 1071

Required percentage change = {(1071 – 816)/816} × 100 = 31.25%

32. Answer: D)

New selling price = 0.8 × 4500 = Rs. 3600

Required discount percentage = {(5625 – 3600)/5625} × 100 = 36%

(33 – 37): Common Explanation:

First let's make a table from the given information

Price per kg	Mon	Tue	Wed	Thur	Fri
Apples	40	38	42	32	30
Banana	12	12	16	24	30
Oranges	28	26	22	22	34

33. Answer: A)

CP of apples = Rs. 20 per kg

CP of oranges = Rs. 12 per kg

CP of banana is = Rs. 6 per kg

CP of 8 kg of apples, 6 kg oranges and 7 kg bananas = 8 × 20 + 6 × 12 + 7 × 6 = Rs. 274

On Tuesday

Apples = Rs. 38 per kg

Bananas = Rs. 12 per kg

Oranges = Rs. 26 per kg

SP 8 kg of apples, 6 kg oranges and 7 kg bananas = 8 × 38 + 6 × 26 + 7 × 12 = Rs. 544

Profit percentage = [(544 - 274)/274] × 100 = 98.54%

34. Answer: B)

On a Wednesday

Apples = Rs. 42 per kg

Bananas = Rs. 16 per kg

Oranges = Rs. 22 per kg

Now,

Cost of three kg of apples = 3 × 42 = Rs. 126

Cost of five kg of oranges = 5 × 22 = Rs. 110

Cost of ten kg of bananas = 10 × 16 = Rs. 160

Thus, by selling three kg of apples, five kg of oranges and ten kg of bananas on Wednesday he earned = 126 + 110 + 160 = Rs. 396

35. Answer: B)

On Wednesday

Apples = Rs. 42 per kg

Bananas = Rs. 16 per kg

Oranges = Rs. 22 per kg

SP of 12 kg of apples, 18 kg of bananas and 16 kg of oranges = 12 × 42 + 18 × 16 + 16 × 22 = Rs. 1,144

On Thursday

Apples = Rs. 32 per kg

Bananas = Rs. 24 per kg

Oranges = Rs. 22 per kg

SP of 12 kg of apples, 18 kg of bananas and 16 kg of oranges = 12 × 32 + 18 × 24 + 16 × 22 = Rs. 1,168

Thus, he earns more on Thursday by 1168 -1144 = Rs. 24

36. Answer: E)

On Monday

Apples = Rs. 40 per kg

Bananas = Rs. 12 per kg

Oranges = Rs. 28 per kg

SP of 10 kg of apples, 8 kg of bananas and 4 kg of oranges = 10 × 40 + 8 × 12 + 4 × 28 = Rs. 608

On Friday

Apples = Rs. 30 per kg

Bananas = Rs. 30 per kg

Oranges = Rs. 34 per kg

SP of 10 kg of apples, 8 kg of bananas and 4 kg of oranges = 10 × 30 + 8 × 30 + 4 × 34 = Rs. 676

Total = 608 + 676 = Rs. 1,284

37. Answer: A)

CP of apples = Rs. 20 per kg

CP of banana is = Rs. 6 per kg

CP of oranges = Rs. 12 per kg

CP of 6 kg apples, 4 kg bananas and 7 kg oranges = 6 × 20 + 4 × 6 + 7 × 12 = Rs. 228

On Monday

SP of 6 kg apples, 4 kg bananas and 7 kg oranges = 6 × 40 + 4 × 12 + 7 × 28 = Rs. 484

On Tuesday

SP of 6 kg apples, 4 kg bananas and 7 kg oranges = 6 × 38 + 4 × 12 + 7 × 26 = Rs. 458

On Wednesday

SP of 6 kg apples, 4 kg bananas and 7 kg oranges = 6 × 42 + 4 × 16 + 7 × 22 = Rs. 470

On Thursday

SP of 6 kg apples, 4 kg bananas and 7 kg oranges = 6 × 32 + 4 × 24 + 7 × 22 = Rs. 442

On Friday

SP of 6 kg apples, 4 kg bananas and 7 kg oranges = 6 × 30 + 4 × 30 + 7 × 34 = Rs. 538

(38 – 39): Common Explanation:

Let the cost price of jacket M = Rs. 6x

The cost price of jacket N = Rs. 8x

The cost price of jacket O = Rs. 5x

Marked price of jacket M = 6x × 130% = Rs. 7.8x

Marked price of jacket N = 8x × 140% = Rs. 11.2x

Marked price of jacket O = 5x × 160% = Rs. 8x

Selling price of jacket M = 7.8x × 85% = Rs. 6.63x

Selling price of jacket N = 11.2x × 80% = Rs. 8.96x

Selling price of jacket O = 8x × 70% = Rs. 5.6x

Profit on jacket M = 6.63x – 6 = Rs. 0.63x

Profit on jacket N = 8.96x – 8x = Rs. 0.96x

Profit on jacket O = 5.6x – 5x = Rs. 0.6x

38. Answer: D)

According to the question,

0.63 + 0.6x × 2 = 366

0.63x + 1.2x = 366

1.83x = 366

x = 200

Cost price of a jacket O = 5 × 200 = Rs. 1000

39. Answer: B)

According to the question,

11.2x – 7.8x = 850

3.4x = 850

x = 250

Selling price of jacket O = 5.6 × 250 = Rs. 1400

40. Answer: A)

Equivalent discount = 15 + 10 – 15 × 10/100

M.P. = 100 unit = Rs. 500

SP = 76.5 unit = Rs. 382.5

Profit = 20% = 1/5

S.P. = 6 unit = Rs. 382.5

CP. = 5 unit = 382.5/6 × 5

Rs. 318.75

41. Answer: C)

Cost price of article II = Rs. 300

Profit % = 20%

Selling price of article II = Rs. 6/5 × 300

= Rs. 360

Equivalent discount = 20 + 15 – 20 × 15/100

= 32%

MP = 100 unit

S.P. = 68 unit

68 unit = Rs. 360

MP = 100 unit = Rs. 360/68 × 100 = Rs. 530

42. Answer: B)

For more than 5 article additional discount was given

Equivalent discount for article II = 32 + 10 – 32 × 10/100

= 38.8%

S.P. = 61.2 unit

M.P. of quantity of article II = 530

S.P. of 1 quantity of article II = 530/100 × 61.2 = 324.36

S. P. of 7 quantity of article II = 7 × 324.36 = 2270.52

Equivalent discount an article III = 27.75 + 10 – 27.75 × 10/100 = 34.775 %

S.P = 100 – 24.975 = 65.225

M.P of 1 quantity of article III = 400

S.P. of 1 quantity of article III = 400/100 × 65.225 = 260.9

S.P. of 6 quantity of article III = Rs. 6 × 260.9 = Rs. 1565

Total bill = Rs. 2270 + Rs.1565 = Rs. 3835

GST = 12%

Final billing amount = 3835 + 12% of 3835 = 3835 + 460.5 = Rs. 4295.56 ≈ 4296

43. Answer: A)

Equivalent discount of article IV = 10 + 8 – 10 × 8/100 = 17.2 %

S.P. of 1 quantity of article IV = 82.8 %

S.P. of 1 quantity of article IV = 400/100 × 82.8 = Rs. 331.2

S.P. of 4 quantity of article IV = 4 × 331.2 = Rs. 1324.8

Equivalent discount of article V = 19 + 10 – 19 × 10/100 = 27.1 %

S.P. of 1 quantity of article V = 500/100 × 72.9

S.P. of 1 quantity of article V = 6 × 364.5 = 2187

Total Cost for Yash = 1324.8 + 2187

Rs. 3512

He sold all the article to Shubham at marked price

S.P. = 4 × 400 + 6 × 500 = 1600 + 3000 = 4600

Profit = 4600 – 3512 = Rs. 1088

Profit % = 1088/3412 × 100 = 31% (Approx)

44. Answer: B)

Equivalent Discount = 10 + 8 – 10 × 8 /100 = 17.2%

S.P = 100 – 17.2 = 82.8%

S.P. of 1 quantity of article IV = 400 × 82.8/100 = Rs. 331.2 = Rs. 331

Profit = 25% = 1/4

SP = 5 unit = Rs. 331

C.P. = 4 unit = Rs. 331/5 × 4

Rs. = 265 (approx)

45. Answer: D)

Discount of 40% on 680 = 680 × 40/100 = 272

Two successive discounts of 25% and 15% = 25 + 15 - 25 × 15/100 = 36.25%

On 680 = 680 × 36.25/100 = 246.5

∴ The required difference = 272 - 246.5 = Rs. 25.5

46. Answer: E)

CP for buyer = 800 × (1 - 25/100) × (1 - 15/100) = 800 × (75/100) × (85/100) = Rs. 510

∴ The buyer got the item at Rs. 510

∵ He sold it at 20% profit

SP = CP (1 + 20/100)

SP = 510 × 120/100

SP = Rs. 612

∵ He gave 10% discount on the item

∴ List price of the article = 612 × 100/90

⇒ Rs. 680

47. Answer: B)

MP of A = 180*100/90= 200

MP of B= 200+100=300

SP of B= 300*90/100=Rs 270

48. Answer: E)

%P=20% =>CP=Rs 150

MP=180*100/90=Rs 200

diff=200-150=Rs 50

49. Answer: A)

SP=110*([100+ 29(6)/11)/100]= Rs 142.5

MP=142.5*100/95= Rs 150

Difference = 150-142.5= Rs 7.5

50. Answer: C)

CP(E)= 1.5*300=Rs 450;

SP = 500*95/100 =Rs 475

%P=(475-450)/450 *100=50/9%= 5(5/9)%