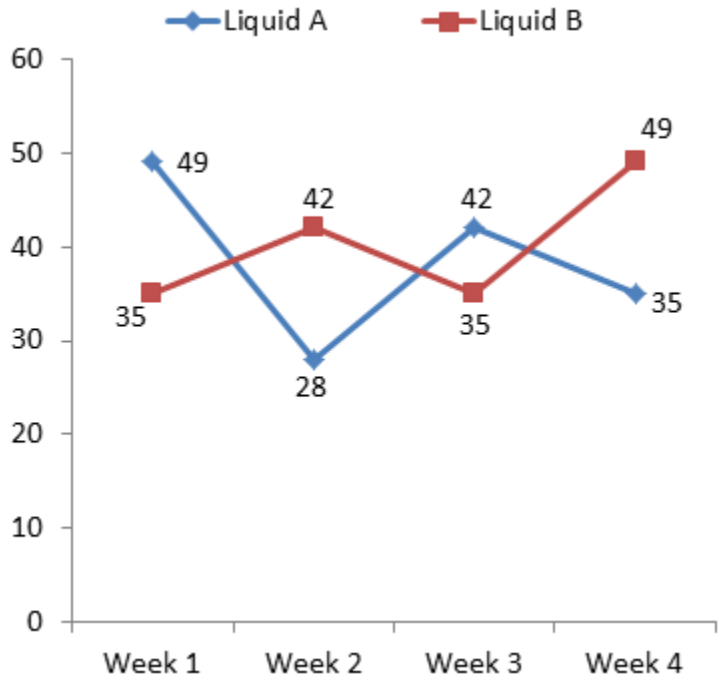
Date Interpretation Mixed Chart Questions Quiz for SBI PO Pre, IBPS PO Pre, SBI Clerk Mains and IBPS Clerk Mains Exams.

DI Mixed Chart Quiz 45

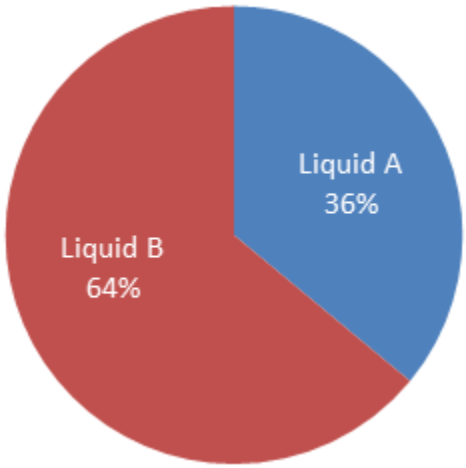
Directions : Study the following line and pie chart carefully and answer the questions given below.

A scientist purchases 50 litres mixture of two liquids A and B such that their percentage composition in mixture is shown in the pie-chart. He purchases them weekly for his photographic experiments at the rates given in the line graph and after mixing them completely, sells it back to a manufacturing company.

Cost price of liquids (in rupees)



Liquid distribution percentage



1. The average cost of the mixture per litre to the scientist, for the 1st three weeks is –

A. Rs. $\frac{2863}{75}$ B. Rs. $\frac{2863}{100}$ C. Rs. $\frac{2863}{50}$ D. Rs. $\frac{2863}{5}$ E. None of these

2. In the 4th Week, find the profit or loss % received by the scientist if he sells the entire mixture solution of that week to the company for Rs. 3297 -

A. 50% loss B. 50% gain C. 25% gain D. 75% loss E. None of these

3. During week-3, 20% of the entire mixture (in container M) was separated in another container N. Find the ratio of the sum of liquid A in N and liquid B in M to the sum of liquid A in M and liquid B in N.

A. $\frac{29}{52}$ B. $\frac{113}{52}$ C. $\frac{73}{52}$ D. $\frac{155}{52}$ E. None of these

4. In week-2, had the scientist sold back both the liquids A & B separately at Rs. 35 & Rs. W per litre, he would have got a total loss of 7%, but while selling them for Rs. 28 & Rs. 35 per litre, he would have got a loss of Z%. Then the product of W & Z is -

A. $\frac{4536}{17}$ B. $\frac{4536}{15}$ C. $\frac{4536}{13}$ D. $\frac{4536}{11}$ E. None of these

5. In week-1, if the scientist secretly converted some percent of liquid B to A (total volume remaining constant) and then mixed them such that the difference in the cost price of the mixtures for the same volume per litre rose by Rs.(248/50). Then, what percent of B was converted from B to A?

A. $\frac{557}{14}$ B. $\frac{577}{14}$ C. $\frac{575}{14}$ D. $\frac{755}{14}$ E. $\frac{775}{14}$

Correct Answers:

1	2	3	4	5
A	B	C	D	E

Explanations:

1. Litres of Liquid B = 64% of 50 litres

$= \frac{64}{100} \times 50 = \frac{64}{2}$

Litres of Liquid B = 32 litres

Litres of Liquid A = 50 – 32 = 18 litres

Average C.P of liquid A = $\frac{49 + 28 + 42}{3}$ = Rs.$\frac{119}{3}$

Average C.P of liquid B = $\frac{35 + 42 + 35}{3}$ = Rs.$\frac{112}{3}$

Let C.P of per litre mixture be Rs. x.

Then, ($\frac{119}{3}$ – x) (18litres) = (x – $\frac{112}{3}$) (32 litres)

$\frac{119 \times 9}{3} + \frac{112 \times 16}{3} = 16x + 9x = 25x$

$\frac{1071 + 1792}{3} = 25x$

x = Rs.$\frac{2863}{75}$

Hence, option A is correct.

2. C.P of mixture per litre for 4th week be Rs. x.

Then, [49 – x] (32 litres) = [x –35] (18 litres)

x = Rs. $\frac{2198}{50}$

For 50 litres, C.P = Rs. 2198

Profit = Rs. 3297 – Rs. 2198 = Rs. 1099

Profit % = $\frac{1099}{2198} \times 100 = \frac{100}{2}$ = 50% gain

Hence, option B is correct.

3.

20% of mixture = $\frac{20}{100}$ of 50 litres

= 10 litres (moved from M to N)

Liquid A in container N = 36% of 10litres = 3.6 litres
Liquid B in container N = 64% of 10litres = 6.4 litres
Liquid A in container M = 36% of 40litres = 14.4 litres
Liquid B in container M = 64% of 40litres = 25.6 litres

$$\text{Ratio} = \frac{\text{Liquid A in N + Liquid B in M}}{\text{Liquid A in M + Liquid B in N}}$$

$$= \frac{3.6 + 25.6}{6.4 + 14.4}$$

$$= \frac{29.2}{20.8} = 292/208 = 73/52$$

Hence, option C is correct.

4.

In week-2, C.P of liquid A = Rs.28 and sold at Rs. 35
C.P of liquid B = Rs. 42 and sold at Rs.W
Total C.P = Rs. (28 × 18 + 42 × 32) = Rs. (504 + 1344) = Rs. 1848 …(1)
Total S.P = Rs. (35 × 18 + W × 32) = Rs.(630 + 32W)
Loss = Rs. [1848 – (630+32W)] = Rs. (1218 – 32W)

$$\text{Loss \%} = \frac{1218 - 32W}{1848} \times 100 = 7$$

$$(1218 - 32W) = \frac{7 \times 1848}{100}$$

$$32W = \frac{121800}{100} - \frac{12936}{100} = \frac{3402 \times 32}{100}$$

$$W = \frac{3402}{100}$$

Also,
Total S.P = Rs.(28 x 18 + 35 x 32) = Rs.(504+1120) = Rs.1624
Loss = Rs. [1848 – 1624] = Rs. 224

$$\text{Loss \%} = Z = \frac{224}{1848} \times 100 = \frac{400}{33}$$

$$\text{Then, } W \times Z = \frac{3402}{100} \times \frac{400}{33} = \frac{3402 \times 4}{33} = \frac{4536}{11}$$

Hence, option D is correct.

5. Let s litres of liq. B be converted.
New volume of B = 32 – s
New volume of A = 18 + s
C.P of mixture per litre for 1st week be Rs. x.
Then, [49 – x] (18 litres) = [x –35] (32 litres)
882 – 18x = 32x – 1120
50x = 1120 + 882 = 2002

$x = \text{Rs. } \frac{2002}{50}$

Then cost price of mixture will be

$\frac{2002}{50} + \frac{248}{50} = \frac{2250}{50} = 45$

(18 + s) (49 – 45) = (45 – 35) (32 – s)
4(18 + s) = 10(32 – s)
72 + 4s = 320 – 10s
14s = 320 – 72 = 248

$s = \frac{248}{14} = \frac{124}{7}$

$\%\text{ of B} = \frac{124/7}{32} \times 100 = \frac{775}{14}$

Hence, option E is correct.