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The Question Bank

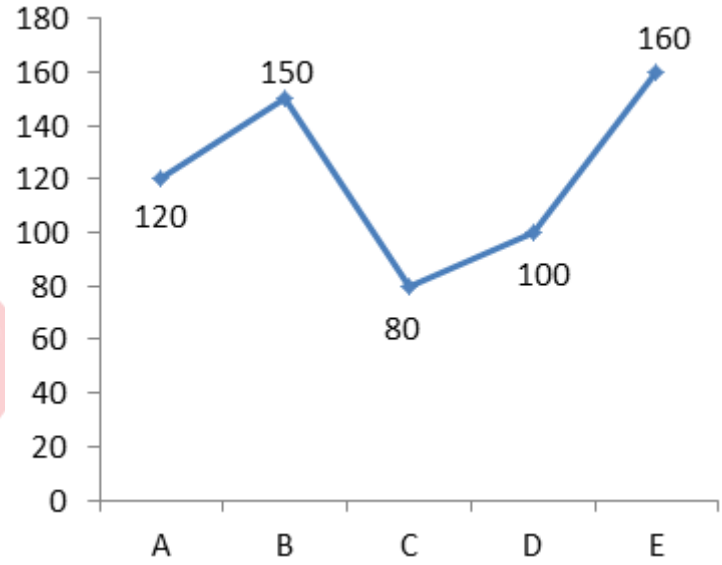
DI Mixed Chart Questions for SBI Clerk Mains, IBPS Clerk Mains, RBI Assistant Mains, LIC AAO, SBI PO Pre and IBPS PO Pre Exams.

DI Mixed Chart No 69

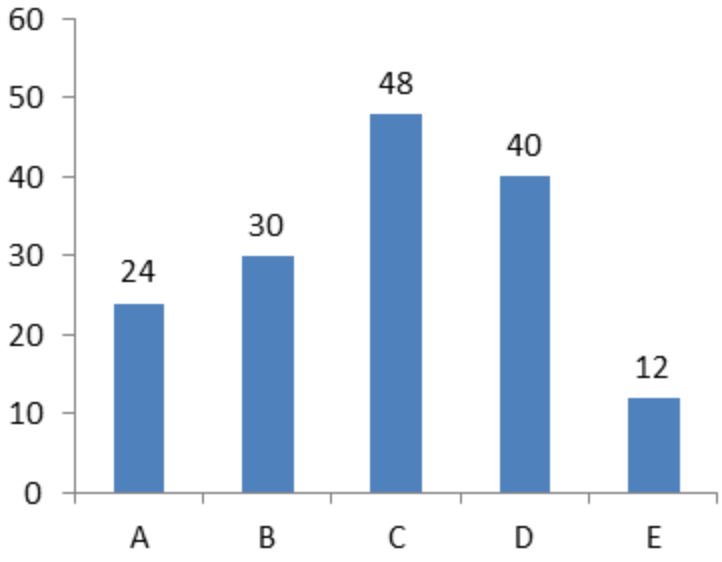
Directions : Study the following line and bar chart carefully and answer the questions given beside.

The following line graph shows the volume of different types of chemical(A, B, C, D and E) produced by a chemical factory and the bar graph represents the percentage of alcohol present in the chemical.
s

Volume Produced (In litres)



Percentage of alcohol in the chemical



Note : The chemical consists of water and alcohol.

1. **Find the ratio between the volume of water present in a mixture of 10 litres of chemical A, 5 litres of chemical C and 20 litres of chemical E and total volume of alcohol brewed for making chemicals B and D.**

A. 139 : 425 B. 19 :45 C. 3 : 5 D. 9 : 4 E. None of these

2. **The concentration of chemical C is to be made 44% by adding chemical E to it. Find the ratio in which the two chemicals have to be mixed to get the desired concentration.**

A. 4 : 1 B. 18 : 1 C. 2 : 9 D. 8 : 1 E. None of these

3. **Find the percentage by which the total volume of alcohol in chemicals A and B together is higher than the total volume of alcohol in chemicals D and E together.**

A. 27.56% B. 28.6% C. 42.6% D. 24.67% E. None of these

4. **A new cocktail is prepared by mixing chemicals A, B, C and E in the ratio 2 : 1 : 3 : 4. Find the percentage of alcohol content in the new cocktail.**

A. 56% B. 37% C. 27% D. 17% E. None of these

5. **Alcohol from Chemical A and D are mixed in the ratio of 1 : 3 to form a new chemical P. 36 litre of chemical P should be mixed with what quantity of chemical C so that the resulting chemical has 60% water?**

A. 24 B. 12 C. 21 D. 15 E. 18

Correct Answers:

1	2	3	4	5
A	D	D	C	E

Explanations :

1. Percentage of alcohol in chemical A = 24%
Percentage of alcohol in chemical C = 48%
Percentage of alcohol in chemical E = 12%

Now,

Volume of water = 10 × (100 – 24)% + 5 × (100 – 48)% + 20 × (100 – 12)%

Volume of water = 7.6 + 2.6 + 17.6 = 27.8 litres

Volume of chemical B produced = 150 litres

Percentage alcohol in chemical B = 30%

Volume of chemical D produced = 100 litres

Percentage of alcohol in chemical C = 40%

Total volume of alcohol brewed in making chemicals B and D

= 30% of 150 + 40% of 100 = 45 + 40 = 85 litres

Required ratio = 27.8 : 85 = 139 : 425

Hence, option A is correct.

2. Alcohol Percentage in chemical C = 48%
Alcohol Percentage in chemical E = 12%
Let the total volume of 44% conc. Chemical be 'a' and volume of chemical C be 'b'
Thus, volume of chemical E in the mixture = a – b
Thus, 48% of b + 12% of (a – b) = 44% of a
⇒ 0.48b + 0.12a – 0.12b = 0.44a
⇒ 0.36b = 0.32a
$\Rightarrow a = \frac{9b}{8}$

Thus, volume of chemical E = $a - b = \frac{b}{8}$

Volume of chemical C = b

Ratio of volumes of the two chemicals = $b : \frac{b}{8} = 8 : 1$

Hence, option D is correct.

3. Volume of chemical A produced = 120 litres

Percentage alcohol in chemical A = 24%

Volume of alcohol in chemical A = 24% of 120 = 28.8 litres

Volume of chemical B produced = 150 litres

Percentage of alcohol in chemical B = 30%

Volume of alcohol in chemical B = 30% of 150 = 45 litres

Volume of chemical D produced = 100 litres

Percentage of alcohol in chemical D = 40%

Volume of alcohol in chemical D = 40% of 100 = 40 litres

Volume of chemical E produced = 160 litres

Percentage of alcohol in chemical E = 12%

Volume of alcohol in chemical E = 12% of 160 = 19.2 litres

Total volume of alcohol in chemical A and B together = (28.8 + 45) = 73.8 litres

Total volume of alcohol in chemical D and E together = (40 + 19.2) = 59.2 litres

Percentage by which, the total alcohol volume in chemicals A and B together is higher than the total volume of alcohol in chemicals D and E together

$$= \frac{78.8 - 59.2}{59.2} \times 100\% = 24.67\%$$

Hence, option D is correct.

4. Percentage of alcohol in chemical A = 24%
Percentage of alcohol in chemical B = 30%
Percentage of alcohol in chemical C = 48%
Percentage of alcohol in chemical E = 12%
Given, new cocktail is prepared by mixing chemicals A, B, C and E in the ratio 2 : 1 : 3 : 4.

$$\text{Percentage of alcohol content in the cocktail} = \frac{(2 \times 24 + 1 \times 30 + 3 \times 48 + 4 \times 12)}{10} = 27\%$$

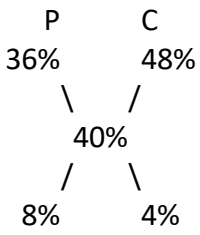
Hence, option C is correct.

5. Alcohol concentration of A = 24% and D = 40%

A and D are mixed in the ratio 1 : 3 to form P

$$\text{Alcohol \% in P} = \frac{(1 \times 24 + 3 \times 40)}{4} = 36\%$$

Using allegations



Ratio = 2 : 1

If p = 36 litre than C = 18 litre

Hence, option E is correct.