Mathematics — Ganita Manjari

Chapter 10 Test 4

How Quantities Combine: Understanding Data

Class IX | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. Calculators are not allowed.
2. Select one correct option in Section A. Show working in Sections B–D.
3. Use given data. Assume additive volumes and no loss unless stated.

SECTION A

(5 questions × 1 mark = 5 marks)

1. A 150 g solution contains 12 g of salt. What is its salt percentage by mass?

(A) 6% (B) 7.2%
(C) 8% (D) 12%

2. Eight grams of salt dissolves in 92 g of water. Which denominator is needed to calculate its mass percentage?

(A) 8 g (B) 84 g
(C) 92 g (D) 100 g

3. Pure water is added to a salt solution without spilling. Which quantity remains unchanged?

(A) Total mass
(B) Mass of salt
(C) Salt percentage
(D) Mass of water

4. One kilogram is removed from a well-mixed 5 kg, 12% sugar solution. What is the remaining concentration?

(A) 12% (B) 10%
(C) 15% (D) 24%

5. What mass ratio should weight 200 g of syrup A and 0.5 kg of syrup B?

(A) 1: 1 (B) 5: 2
(C) 2: 5 (D) 1: 4

SECTION B

(4 questions × 2 marks = 8 marks)

6. A 10 kg solution contains 12% salt. How much pure water must be added to reduce its concentration to 8%?

7. A 6 kg syrup contains 20% sugar. How much pure sugar must be added to make the syrup 40% sugar?

8. A student claims that mixing 4 kg of 25% syrup with 6 kg of 5% syrup gives 15% syrup. Check the claim.

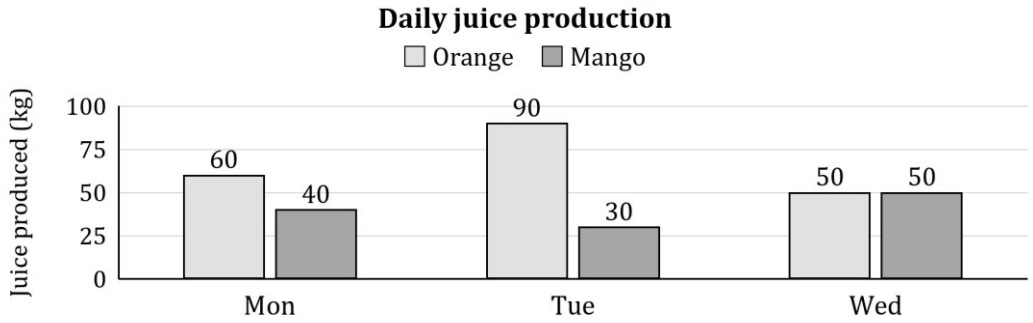
9. The table shows juice output over five days. Find the mean daily output for all five days.

Period	Days	Mean output (kg/day)
I	2	120
II	3	160

SECTION C

(3 questions × 3 marks = 9 marks)

10. Juice production is shown in figure.



(i) Which day has the greatest total output?
(ii) What percentage of Tuesday's output is orange juice?
(iii) Find the mango percentage across all three days.

11. From 10 kg of well-mixed 20% sugar solution, 2 kg is removed and replaced with 2 kg of pure water. Find the sugar lost, sugar remaining and final concentration.

12. An 8 kg, 15% salt solution loses 2 kg of water by evaporation. Find its new concentration and the water required to make the remaining solution 10% salt.

SECTION D

(1 application question × 3 marks = 3 marks)

13. Mix 3 kg of an 8% salt solution containing no sugar with 2 kg of a 15% sugar solution containing no salt. Find both final concentrations and their sum.