Mathematics — Ganita Manjari

Chapter 10 Test 8

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. Red blooms: P has 30 of 50; Q has 40 of 100. Whose red share is larger?
(A) P
(B) Q
(C) Both equal
(D) Cannot be determined

2. Three shares sum to 100%. Two increase. The third must:
(A) Increase.
(B) Decrease.
(C) Stay unchanged.
(D) Become 100%.

3. A count rises from 40 of 100 to 50 of 200. Count and share respectively:
(A) Both rise.
(B) Both fall.
(C) Rise and fall.
(D) Fall and rise.

4. There are 120 seedlings across 6 m^2. Find their average density.
(A) 6 seedlings/m^2
(B) 12 seedlings/m^2
(C) 720 seedlings/m^2
(D) 20 seedlings/m^2

5. Which row cannot represent a complete 100% stacked bar?
(A) 20%, 30%, 50%
(B) 40%, 35%, 30%
(C) 25%, 25%, 50%
(D) 10%, 60%, 30%

SECTION B

(4 questions × 2 marks = 8 marks)

6. Two gardens each have 30 winter blooms. Their annual totals are 60 and 150. Find both winter shares and explain why equal counts need not give equal percentages.

7. Of 40 seedlings in one bed, 75% survive; of 60 in another, 90% survive. Find the total failures and the fraction of all failures from the first bed.

8. Using the table, find the overall tree density. Explain why areas, rather than equal weights for the zones, should be used.

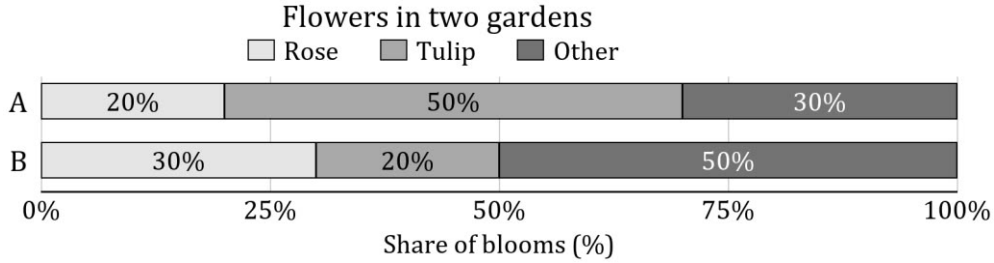
Zone	Area (ha)	Trees
A	2	40
B	3	90
C	5	70

9. Two compost heaps have equal dry-matter masses. Their moisture contents by mass are 70% and 40%. Find the ratio of their total masses.

SECTION C

(3 questions × 3 marks = 9 marks)

10. The flower shares in figure describe gardens A and B, with 150 and 100 blooms respectively.



(i) Which garden has the higher rose share?
(ii) Compare the actual rose counts.
(iii) Find the combined tulip percentage.

11. Gardens A and B score (90,40) and (60,65) for shade and biodiversity. Compare their equal-weight scores, then use weights 1: 3. Explain the change in ranking.

12. Summer accounts for 60% of garden P's blooms and 40% of Q's. Give two possible pairs of annual totals making P's summer count first larger, then smaller. What does this show?

SECTION D

(1 application question × 3 marks = 3 marks)

13. A garden's rose, lily and other bloom counts fall from (60,25,15) to (30,20,10). Calculate the new shares. Explain how two shares rise despite every count falling.