Mathematics — Ganita Manjari

Chapter 10 Test 6

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. Two scores have different maximum marks. Before applying custom weights, they should be expressed as:

(A) Percentages (B) Raw marks only
(C) Maximum marks only (D) Ranks only

2. Scores 70 and 90 have respective weights 1 and 3. What is their weighted mean?

(A) 75 (B) 80
(C) 82.5 (D) 85

3. A score rises from 60% to 72%. What is the increase in percentage points?

(A) 20 (B) 12
(C) 10 (D) 72

4. Two tests are out of 40 and 60. Pooling raw marks implicitly weights their percentage scores in which ratio?

(A) 1: 1 (B) 3: 2
(C) 2: 3 (D) 4: 1

5. What does a zero weight do to a criterion in a weighted mean?

(A) Excludes its influence (B) Doubles its influence
(C) Makes all scores zero (D) Makes it most important

SECTION B

(4 questions × 2 marks = 8 marks)

6. A learner scores 28 out of 40 in theory and 45 out of 50 in practical work. Their weights are 2:3. Find the combined percentage.

7. Internal and examination percentages have weights 2:3. A learner has 60% internally and wants 78% overall. What examination percentage is required?

8. Use the complete rating distribution in figure to find the mean rating and the percentage awarding 5 stars.



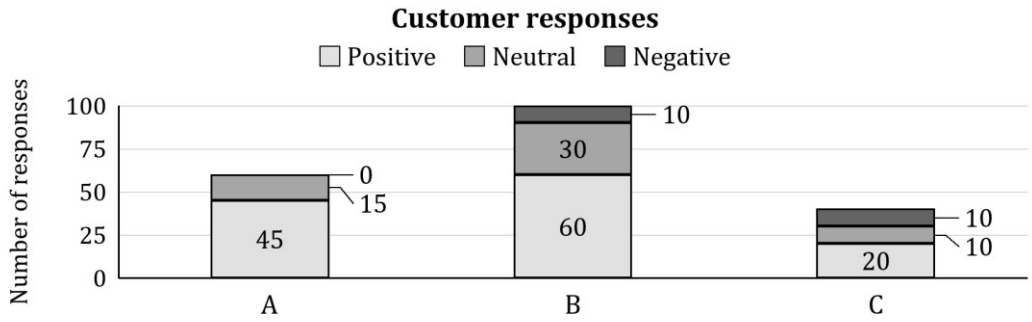
9. Knowledge and skill have weights 1:3. A scores 80 and 60; B scores 60 and 80. Without finding both final scores, find B's advantage.

SECTION C

(3 questions × 3 marks = 9 marks)

10. Ten recent reviews average 4.8 stars; twenty older reviews average 3.6 stars. Find the ordinary combined mean and the rating when each recent review receives twice an older review's weight.

11. Customer responses to three shops are shown in figure.



(i) How many responses did Shop C receive?
(ii) What percentage of Shop A's responses were positive?
(iii) Could a 100% stacked chart alone answer part (i)? Explain.

12. Food, service and ambience have weights 5:3:2 and ratings from 1 to 5. Food scores 4 and service 3. Can the overall rating be 4.5? Find the maximum possible rating.

SECTION D

(1 application question × 3 marks = 3 marks)

13. Two criteria are scored out of 100. A scores 90 and 60; B scores 70 and 90. Find positive weights that make their combined scores equal, and find that score.