TYBA COACHING CENTRE, AJMER (RAJASTHAN)

RMS CET Class VI Mathematics • Official Answer Key & Explanations

Chapter 7: Ratio & Proportion (अनुपात एवं समानुपात) • Max Marks: 50 • Helpline: 6367029449

Official Master Answer Key (Q01 to Q20) / उत्तर तालिका

Distribution: 5A, 5B, 5C, 5D

Q.	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
Ans	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D

Step-by-Step Solutions (Q01 to Q10) / चरणबद्ध व्याख्यात्मक हल

Part I

Q1. Ans: (A) 1 : 4

Convert ₹3 to paise: ₹3 = 300 paise. Ratio = 75 paise : 300 paise = 75/300 = **1 : 4**.

₹3 = 300 पैसे → 75 : 300 = 1 : 4।

Q2. Ans: (B) 2 : 3

Ratio product shortcut: `A/C = (A/B) × (B/C) = (3/4) × (8/9) = 24/36 = 2/3` → A : C = **2 : 3**.

भिन्नों का गुणा: (3/4) × (8/9) = 2/3 → A : C = 2 : 3।

Q3. Ans: (C) 27

Let fourth proportional = d. Then 4 : 9 :: 12 : d → 4 × d = 9 × 12 → d = (9 × 12) / 4 = 9 × 3 = **27**.

चतुर्थानुपाती d = (9 × 12) / 4 = 27।

Q4. Ans: (D) 15

Mean proportional between a and c is `b = √(ac) = √(9 × 25) = 3 × 5 = 15`.

मध्यानुपाती b = √(9 × 25) = 15।

Q5. Ans: (A) 6 : 4 : 3

Let 2A = 3B = 4C = k → A = k/2, B = k/3, C = k/4. Multiply by LCM(2,3,4)=12 → 6 : 4 : 3.

12 से भाग देने पर A/6 = B/4 = C/3 → A : B : C = 6 : 4 : 3।

Q6. Ans: (B) ₹750

Total parts = 5 + 3 = 8 parts. A's share = (5/8) × 1,200 = 5 × 150 = **₹750**.

कुल 8 भाग = ₹1200 → 1 भाग = ₹150 → A = 5 × 150 = ₹750।

Q7. Ans: (C) 16 : 25

Duplicate ratio is the ratio of squares: `4² : 5² = 16 : 25`.

वर्ग अनुपात = $4^2 : 5^2$ = 16 : 25।

Q8. Ans: (D) 120

Ratio of coins = 2x, 3x, 4x. Total value = 2x(₹1) + 3x(₹0.50) + 4x(₹0.25) = 2x + 1.5x + x = 4.5x = 180 → x = 40. 50p coins = 3x = 3 × 40 = **120 coins**.

मूल्य समीकरण: 4.5x = 180 → x = 40 → 50 पैसे के सिक्के = 3 × 40 = 120।

Q9. Ans: (A) 2

Let added number = x. (6+x)/(14+x) = (18+x)/(38+x) → Cross-multiply gives x = **2**.

Check: (6+2)=8, (14+2)=16, (18+2)=20, (38+2)=40 → 8/16 = 20/40 = 1/2.

प्रत्येक में 2 जोड़ने पर 8/16 = 20/40 = 1/2 समानुपाती हो जाते हैं।

Q10. Ans: (B) 18 years

Let present ages be 3x and 5x. (3x + 6) / (5x + 6) = 2 / 3 → 9x + 18 = 10x + 12 → x = 6. A's present age = 3x = 3 × 6 = **18 years**.

समीकरण: 9x + 18 = 10x + 12 → x = 6 → A की आयु = 3 × 6 = 18 वर्ष।

Narayan Sir's Key Exam Highlight (Q01 to Q10): In coin problems (Q8), never equate the number of coins to the money! Multiply by coin denomination first to obtain the total value equation.

सिक्कों के प्रश्नों में सिक्कों की संख्या को पहले रुपये में बदलें, तभी कुल मूल्य के बराबर रखें।

Narayan Sir's Proportionality Checklist (Q01 to Q10):

- Third Proportional ($c = b^2/a$) applies when only 2 numbers are given: $a : b :: b : c$.
- Fourth Proportional ($d = bc/a$) applies when 3 numbers are given: $a : b :: c : d$.
- Mean Proportional ($b = √(ac)$) is the geometric mean between 2 numbers.

तृतीयानुपाती में 2 संख्याएं दी जाती हैं (b^2/a), चतुर्थानुपाती में 3 संख्याएं दी जाती हैं (bc/a)।

TYBA COACHING CENTRE, AJMER • ANSWER KEY & SOLUTIONS (PAGE 2)

Chapter 7: Ratio & Proportion • Helpline: 6367029449

Step-by-Step Solutions (Q11 to Q20) / चरणबद्ध व्याख्यात्मक हल (भाग 2) — Part II

Q11. Ans: (C) 4 : 7
Sub-triplicate ratio is the ratio of cube roots: $\sqrt[3]{64} : \sqrt[3]{343} = 4 : 7$.
घनमूला अनुपात = $\sqrt[3]{64} : \sqrt[3]{343} = 4 : 7$।

Q12. Ans: (D) 12
Proportion rule: Product of extremes = Product of means. x × 21 = 18 × 14 → x = (18 × 14) / 21 = (18 × 2) / 3 = 6 × 2 = **12**.
बाह्य गुणनफल = मध्य गुणनफल: x × 21 = 18 × 14 → x = 12।

Q13. Ans: (A) 8 : 12 : 15
N-Method: A = 2 × 4 = 8, B = 3 × 4 = 12, C = 3 × 5 = 15. Ratio $A : B : C = 8 : 12 : 15$.
A = 2×4 = 8, B = 3×4 = 12, C = 3×5 = 15 → 8 : 12 : 15।

Q14. Ans: (B) 36
Third proportional to a and b is $c = b^2 / a = 24^2 / 16 = 576 / 16 = 36$.
तृतीयानुपाती c = 24^2 / 16 = 576 / 16 = 36।

Q15. Ans: (C) 60 Liters
Milk = (2/3) × 60 = 40 L, Water = 20 L. In new ratio 1 : 2, Milk remains 40 L = 1 part → Water = 2 parts = 80 L. Water added = 80 − 20 = **60 Liters**.
दूध 40 ली स्थिर रहेगा; नया पानी = 80 ली → मिलाया गया पानी = 80 − 20 = 60 ली।

Q16. Ans: (D) 36°
Sum of angles of triangle = 180°. Total parts = 2 + 3 + 5 = 10 parts. 1 part = 180° / 10 = 18°. Smallest angle (2 parts) = 2 × 18° = **36°**.
कुल 10 भाग = 180° → 1 भाग = 18° → सबसे छोटा = 2 × 18° = 36°।

Q17. Ans: (A) ₹4,000
Let incomes be 5x and 4x. (5x − 1600) / (4x − 1600) = 3 / 2 → 10x − 3200 = 12x − 4800 → 2x = 1600 → x = 800. A's Income = 5x = 5 × 800 = **₹4,000**.
समीकरण: 10x − 3200 = 12x − 4800 → 2x = 1600 → x = 800 → A की आय = ₹4,000।

Q18. Ans: (B) 20 : 15 : 12
Inverse ratio of 3 : 4 : 5 = 1/3 : 1/4 : 1/5. LCM of (3, 4, 5) = 60. Multiply each by 60: 60/3 : 60/4 : 60/5 = **20 : 15 : 12**.
1/3 : 1/4 : 1/5 में 60 से गुणा करने पर 20 : 15 : 12 प्राप्त होता है।

Q19. Ans: (C) 5 : 2
Given (x + y)/(x − y) = 7/3. Apply Componendo & Dividendo: 2x / 2y = (7 + 3)/(7 − 3) = 10 / 4 = 5 / 2 → $x : y = 5 : 2$.
C&D लगाने पर x/y = (7+3)/(7−3) = 10/4 = 5/2 → x : y = 5 : 2।

Q20. Ans: (D) 6 : 4 : 3
When distance is constant, Time is inversely proportional to Speed: T1 : T2 : T3 = 1/2 : 1/3 : 1/4. Multiply by LCM 12: 12/2 : 12/3 : 12/4 = **6 : 4 : 3**.
दूरी समान होने पर समय का अनुपात चाल का व्युत्क्रमानुपात होता है: 1/2 : 1/3 : 1/4 = 6 : 4 : 3।

RMS Entrance Exam Performance Scorecard & Cutoff Rubric / मूल्यांकन पैमाना — Max: 50 Marks

Score (अंक)	Correct Questions	Performance Grade	Action Plan / तैयारी सुझाव
45 – 50	18 – 20 Correct	★ Excellent (Merit Rank)	Maintain speed; practice daily mock tests.
38 – 44	15 – 17 Correct	Good (Selection Safe)	Drill continued ratios and coins problem formulations.
Below 38	< 15 Correct	Needs Immediate Drill	Re-read 6-page Theory Notes; practice Worksheet Section G.