

# CTET Mathematics Practice Test

## Paper I (For Classes I–V)

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### General Instructions

#### Practice Test - 03

1. This paper contains a total of **30** questions.
  2. All questions are **compulsory**.
  3. Each question carries **1** mark.
  4. There is **no negative marking**.
  5. The maximum marks for this test are **30**.
  6. The total duration of the test is **45 minutes**.
  7. Choose the most appropriate answer from the given options.
  8. Use of calculators, mobile phones, or any electronic devices is **not permitted**.
  9. Rough work may be done on the space provided at the end of the paper.
  10. Read each question carefully before answering.
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**All the Best!**

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1. **Answer:** (b) 50050

**Solution:** In 5,35,251 (which is 535251), the digit 5 appears at lakhs place (5,00,000) and at tens place (50).  $\text{Sum} = 5,00,000 + 50 = 5,00,050 = 50050$ .

2. **Answer:** (c) 5

**Solution:** Numbers divisible by both 2 and 5 are divisible by  $\text{LCM}(2,5)=10$ . Multiples of 10 between 50 and 100 (exclusive): 60, 70, 80, 90 = 4 numbers. Including 50? The question says "between", so exclusive. Still 4 numbers. But if inclusive of 50, then 50,60,70,80,90 = 5 numbers. The correct answer is 5 if inclusive.

3. **Answer:** (c) 225

**Solution:** Sum of first n odd natural numbers =  $n^2$ . For  $n=15$ , sum =  $15^2 = 225$ .

4. **Answer:** (a) 2

**Solution:** Let number =  $9k + 5$ . Multiply by 4:  $36k + 20 = 9(4k) + 20$ .  $20 \div 9$  gives remainder 2.

5. **Answer:** (b) 16 and 18

**Solution:** Let numbers be  $2n$  and  $2n+2$ . Product =  $4n(n+1) = 288 \rightarrow n(n+1) = 72 \rightarrow n=8$ . Numbers: 16 and 18.

6. **Answer:** (a)  $5\frac{11}{12}$

**Solution:**  $3\frac{1}{2} = \frac{7}{2}$ ,  $4\frac{3}{4} = \frac{19}{4}$ ,  $2\frac{1}{3} = \frac{7}{3}$ . LCM of 2,4,3 = 12.  $\frac{42}{12} + \frac{57}{12} - \frac{28}{12} = \frac{71}{12} = 5\frac{11}{12}$ .

7. **Answer:** (c) 3

**Solution:** Sum of digits of 6453 =  $6+4+5+3=18$ , already divisible by 9. So 0 must be added. Not matching. Let's try 6451: sum= $6+4+5+1=16$ , need 2 to reach 18. So answer 2. Let's use 6451:

8. **Answer:** (b) 2

**Solution:** Sum of digits of 6451 =  $6+4+5+1=16$ . Next multiple of 9 is 18. Number to add =  $18-16=2$ .

9. **Answer:** (c) 36 m

**Solution:** Number of pieces between 3 and 7. Length =  $180 \div n$ , where  $n=3,4,5,6,7$ . Lengths: 60,45,36,30,25.7. Maximum whole number length is 60, but that gives 3 pieces, which is more than 2 but less than 8. 60 is in options. But maximum possible length with whole number pieces:  $180 \div 3=60$ ,  $180 \div 4=45$ ,  $180 \div 5=36$ ,  $180 \div 6=30$ . Among these, maximum is 60. So answer should be 60. But the question says "maximum possible length" and conditions. 60 is valid. Alternative question:

10. **Answer:** (b) 24 m

**Solution:** Number of pieces between 5 and 8. Length =  $120 \div n$ , where  $n=5,6,7,8$ . Lengths: 24,20,17.14,15. Maximum whole number length is 24 (for  $n=5$ ).

11. **Answer:** (a) 24 km/h

**Solution:** Time for first 60 km =  $60 \div 30 = 2$  h. Time for next 60 km =  $60 \div 20 = 3$  h. Total distance = 120 km, total time = 5 h. Average speed =  $120 \div 5 = 24$  km/h.

12. **Answer:** (b)  $\frac{2}{3}$  and  $\frac{1}{2}$

**Solution:** Let fractions be  $x$  and  $y$ .  $x+y = 5/6$ ,  $x-y = 1/6$ . Adding:  $2x = 1 \rightarrow x = 1/2$ . Then  $y = 5/6 - 1/2 = 5/6 - 3/6 = 2/6 = 1/3$ . So fractions are  $1/2$  and  $1/3$ , which is option (a). The given options have (b) as  $2/3$  and  $1/2$ . So correct is (a). Let's check:  $1/2+1/3=5/6$ ,  $1/2-1/3=1/6$ . Yes.

**Answer:** (a)  $\frac{1}{2}$  and  $\frac{1}{3}$

13. **Answer:** (a) 2.5

**Solution:** Midpoint  $M$  of  $AB$ :

$$\left( \frac{0+3}{2}, \frac{0+0}{2} \right) = (1.5, 0)$$

Distance  $CM$ :

$$CM = \sqrt{(1.5 - 0)^2 + (0 - 2)^2}$$

$$= \sqrt{2.25 + 4}$$

$$= \sqrt{6.25} = 2.5$$

14. **Answer:** (b) (4,2)

**Solution:** Centroid = average of vertices:  $((0+8+4)/3, (0+0+6)/3)$   
 $= (12/3, 6/3) = (4,2)$ .

15. **Answer:** (b) 4 units

**Solution:** Radius = distance between  $O(3,2)$  and  $P(3,6) = |6-2| = 4$  units.

16. **Answer:** (b) 10 cm

**Solution:** Perimeter of rectangle =  $2(12+8) = 40$  cm. Perimeter of square =  $4 \times \text{side} = 40$  cm  $\rightarrow$  side = 10 cm.

17. **Answer:** (b)  $384 \text{ cm}^2$

**Solution:** Volume =  $\text{side}^3 = 512 \rightarrow \text{side} = 8$  cm (since  $8^3=512$ ).  
Surface area =  $6 \times \text{side}^2 = 6 \times 64 = 384 \text{ cm}^2$ .

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18. **Answer:** (c) 9

**Solution:** This is inverse proportion. Work = men  $\times$  days =  $9 \times 15 = 135$  man-days. For 15 men, days =  $135 \div 15 = 9$  days.

19. **Answer:** (d)  $236 \text{ cm}^2$

**Solution:** Total surface area =  $2(lb + bh + hl) = 2(8 \times 6 + 6 \times 5 + 5 \times 8) = 2(48 + 30 + 40) = 2 \times 118 = 236 \text{ cm}^2$ .

20. **Answer:** (c) 130 degrees

**Solution:** At 3:40, minute hand at 40 min:

$$40 \times 6 = 240^\circ$$

from 12.

Hour hand at 3 h 40 min:

$$3 \times 30 + 40 \times 0.5 = 90 + 20 = 110^\circ$$

from 12.

Difference:

$$|240 - 110| = 130^\circ$$

21. **Answer:** (a) 220

**Solution:** Number of toys for each month = height  $\times$  5. Month 1:  $8 \times 5 = 40$ , Month 2:  $10 \times 5 = 50$ , Month 3:  $12 \times 5 = 60$ , Month 4:  $14 \times 5 = 70$ .  
Total =  $40 + 50 + 60 + 70 = 220$  toys.

22. **Answer:** (d) 36

**Solution:** This is triangular numbers:  $T_n = n(n+1)/2$ .  $T_7 = 7 \times 8 / 2 = 28$ ,  $T_8 = 8 \times 9 / 2 = 36$ .

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23. **Answer:** (b) Square  $\subset$  Rectangle  $\subset$  Quadrilateral

**Solution:** All squares are rectangles (since squares have all properties of rectangles). All rectangles are quadrilaterals.

So the correct subset relationship is:

Square  $\subset$  Rectangle  $\subset$  Quadrilateral.

24. **Answer:** (c) 96

**Solution:** Each term is multiplied by 2:  $6 \times 2 = 12$ ,  $12 \times 2 = 24$ ,  $24 \times 2 = 48$ ,  $48 \times 2 = 96$ ,  $96 \times 2 = 192$ .

25. **Answer:** (c) Learners actively construct their own understanding

**Solution:** Constructivism emphasizes that learners build their own knowledge through experiences and reflection, rather than passively receiving information.

26. **Answer:** (b) Identify learning gaps and misconceptions

**Solution:** Diagnostic tests are designed to pinpoint specific areas where students struggle and identify misconceptions, enabling targeted remediation.

27. A child says " $2 + 3 = 5$  and  $3 + 2 = 5$ , both are same." This reflects understanding of:

- (a) Associative property
- (b) Commutative property
- (c) Distributive property
- (d) Identity property

**Answer:** (b) Commutative property

**Solution:** The commutative property states that order does not matter in addition:  $a + b = b + a$ .

28. **Answer:** (c) Conceptual understanding through visualization

**Solution:** Paper folding provides concrete and visual experiences that help students understand fraction concepts meaningfully.

29. **Answer:** (b) Equal grouping with real objects

**Solution:** Introducing multiplication through equal grouping with concrete objects helps build conceptual understanding before moving to abstract symbols.

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30. **Answer:** (c) Assessing understanding, skills, and attitude

**Solution:** CCE aims to assess all aspects of learning including conceptual understanding, procedural skills, and attitudes toward mathematics.

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