

CH 1 NUMBER SYSTEM

ANSWERS AND EXPLANATIONS

EXERCISE 1

1. (c) From the given alternatives,

$$112 \times 114 = 12768$$

$$\therefore \text{Large number} = 114$$

2. (d) Amount received by each person

$$= ₹ \frac{50176}{32} = 1568$$

3. (d) Amount received by each person

$$= \frac{172850}{25} = ₹ 6914$$

4. (a) Total number of candles = $15 \times 12 \times 39 = 7020$

5. (a) Out of the given alternatives,

$$137 \times 139 = 19043$$

$$\therefore \text{Required smaller number} = 137$$

6. (d) Let the number be x and $(x + 1)$,

$$\therefore x(x + 1) = 8556$$

$$\text{or, } x^2 + x - 8556 = 0$$

$$\text{or, } x^2 + 93x - 92x - 8556 = 0$$

$$\text{or, } (x^2 + 93)(x - 92) = 0$$

$$\therefore x = 92$$

7. (c) Quantity of wheat for 7 days = 112 kg

$$\therefore \text{Quantity of wheat for 1 day} = \frac{112}{7} \text{ kg}$$

$$\therefore \text{Quantity of wheat for 69 days}$$

$$= \frac{112}{7} \times 69 = 1104 \text{ kg}$$

8. (a) Required amount = $\frac{41910}{22} = ₹1905$

9. (c) Let the smaller number be x

$$\therefore x \times (x + 2) = 4488$$

$$\Rightarrow x^2 + 2x - 4488 = 0$$

$$\Rightarrow (x + 68)(x - 66) = 0$$

$$\therefore x = 66$$

10. (a) Required number of bananas

$$= \frac{21}{7} \times 54 = 162 \text{ dozen}$$

11. (d) Amount received by each person

$$= \frac{72128}{46} = ₹1568$$

12. (b) $38^2 = 1444$

$$39^2 = 1521$$

$$\therefore \text{Required number} = 1521 - 1500 = 21$$

13. (e) Let the three consecutive integers be x , $x + 1$ and $x + 2$

According to the question,

$$x + x + 1 + x + 2 = 39$$

$$\text{or, } 3x + 3 = 39$$

$$\text{or, } 3x = 39 - 3 = 36$$

$$\text{or, } x = \frac{36}{3} = 12$$

$$\therefore \text{Required largest number}$$

$$= x + 2 = 12 + 2 = 14$$

14. (d) Number of pieces = $\frac{455.8}{8.6} = 53$

15. (d) Out of the given alternatives,
 $56 \times 57 = 3192$

16. (c) Amount received by each student
 $= \frac{15487}{76} = \approx ₹204$

17. (b) Quicker Approach:

The unit's digit of the number 16128 is 8,

From the given answer choices,

$$126 \times 128 = 16128$$

$$\therefore \text{Required larger number} = 128$$

18. (c) Number of mangoes = 12 dozens
 $= 12 \times 12 = 144$
 \therefore Number of mangoes in 43 boxes
 $= 43 \times 144 = 6192$

19. (b) Requirement of bananas for 1 day in the canteen
 $= 13$ dozens
 \therefore Requirement of bananas for 9 weeks i.e. 63 days
 $= 63 \times 13$ dozens
 $= 63 \times 13 \times 12 = 9828$.

20. (e) Let the cost of one chair be ₹ x and that of a table be ₹ y
 $= ₹y$
 According to the question,
 $3x + 10y = ₹9856$
 or, $2 \times (3x + 10y) = 2 \times 9856$
 $\therefore 6x + 20y = ₹19712$

21. (a) Amount received by each person
 $= \frac{123098}{61} = ₹2018$

22. (a) According to the question,

$$x + x + 2 + x + 4 + x + 6 + x + 8 = 140$$

$$\text{or, } 5x + 20 = 140$$

$$\text{or, } 5x = 120$$

$$\therefore x = \frac{120}{5} = 24$$

$$\therefore x + 8 = 24 + 8 = 32$$

The next set of five consecutive even number will start with = 34

$$\therefore \text{Required sum}$$

$$= 34 + 36 + 38 + 40 + 42 = 190$$

23. (d) Let the cost of a table be = ₹x and that chair be ₹y

According to the question,

$$5x + 6y = ₹2884$$

$$\therefore 3 \times 5x + 3 \times 6y = 3 \times ₹2884$$

$$\text{or, } 15x + 18y = ₹8652$$

24. (a) From the given alternatives,
 $1763 = 43 \times 41$

25. (e) Required quantity of rice

$$= \frac{4560 \times 7}{30} \text{ kg} = 1064 \text{ kg}$$

26. (d) amount received by each person
 $= \frac{13957}{45} = ₹310.15 \approx ₹310$

27. (d) Let the smaller number be x
 $\therefore x(x + 2) = 5358$
 $\Rightarrow x^2 + 2x - 5358 = 0$
 $\Rightarrow (x + 74)(x - 42) = 0$
 $\therefore x = 72$

28. (c) $\frac{x+x+2+x+4+x+6}{4} = 27$
 $\Rightarrow x = \frac{27 \times 4 - 12}{4}$



$$= \frac{96}{4} = 24$$

∴ Highest number = 24 + 6 = 30

29. (a) Decimal equivalents of given fractions:

$$\frac{1}{2} = 0.5; \quad \frac{2}{3} = 0.67;$$

$$\frac{5}{9} = 0.56; \quad \frac{6}{13} = 0.46;$$

$$\frac{7}{9} = 0.78$$

∴ 0.46 < 0.5 < 0.56 < 0.67 < 0.78

$$\frac{6}{13} < \frac{1}{2} < \frac{5}{9} < \frac{2}{3} < \frac{7}{9}$$

∴ Fourth fraction = $\frac{2}{3}$

30. (a) Decimal equivalents of fractions

$$\frac{7}{8} = 0.875, \quad \frac{4}{5} = 0.8$$

$$\frac{8}{14} = 0.57, \quad \frac{3}{5} = 0.6$$

$$\frac{5}{6} = 0.83$$

∴ 0.875 > 0.83 > 0.8 > 0.6 > 0.57

$$\therefore \frac{7}{8} > \frac{5}{6} > \frac{4}{5} > \frac{3}{5} > \frac{8}{14}$$

31. (b) Decimal equivalent of given fractions:

$$\frac{2}{5} = 0.4; \quad \frac{3}{4} = 0.75; \quad \frac{4}{5} = 0.8;$$

$$\frac{5}{7} = 0.714; \quad \frac{6}{11} = 0.545$$

Clearly, 0.4 < 0.545 < 0.714 < 0.75 < 0.8

$$\therefore \frac{2}{5} < \frac{6}{11} < \frac{5}{7} < \frac{3}{4} < \frac{4}{5}$$

32. (a) Let the larger and smaller numbers be x and y respectively.

$$\text{Then, } x - y = 3 \quad \dots(i)$$

$$\text{and, } x^2 - y^2 = 63$$

$$\Rightarrow (x + y)(x - y) = 63$$

$$\Rightarrow (x + y) = \frac{63}{3} = 21 \quad \dots(ii)$$

From equation (i) and (ii),

$$x = 12$$

33. (a) Let the number be = x

According to the question,

$$x - \frac{2x}{5} = 30$$

$$\Rightarrow \frac{3x}{5} = 30$$

$$\Rightarrow x = \frac{30 \times 5}{3} = 50$$

34. (c) Sum to be collected from 54 students = 60 × 54 = ₹3240

Sum collected from 45 students = 60 × 45 = ₹2700

Difference = 3240 - 2700 = ₹540

∴ Additional amount to be paid by each student

$$= \frac{540}{45} = ₹12$$

35. (d) Let the number be x.

$$\therefore x^2 - (12)3 = 976$$

$$\therefore x^2 = 976 + 1728 = 2704$$

$$\therefore x = \sqrt{2704} = 52$$

36. (c) ∴ 5 chairs + 8 tables = ₹6574

∴ 10 chairs + 16 tables = 6574 × 2 = ₹ 13148

37. (b) Let the number be x.



