



CLASS VI - KEY

1.	C or A	11.	C	21.	B	31.	A	41.	C	51.	12
2.	B	12.	C	22.	B	32.	B	42.	A	52.	8
3.	B	13.	C	23.	C	33.	C	43.	D	53.	37
4.	E	14.	A	24.	B	34.	B	44.	B	54.	Thursday
5.	C	15.	A	25.	A	35.	C	45.	D	55.	150° (or) 210°
6.	A	16.	B	26.	D	36.	A	46.	A	56.	0%
7.	D	17.	C	27.	C	37.	A	47.	B	57.	64
8.	D	18.	D	28.	D	38.	C	48.	D	58.	55
9.	C	19.	D	29.	C	39.	A	49.	D	59.	3
10.	B	20.	A OR B	30.	C	40.	B	50.	C	60.	12

CLASS – VI

SOLUTIONS

01. **C or A**

Odd Prime Numbers

Ex : 6 + 3 + 3 8 → 3 + 5 10 + 5 + 5 12 → 5 + 7 14 → 7 + 7 etc.

02. **B**

H.C.F = 22 L.C.M. = 132

$a = 2 \times 22 = 44$ $a \times b = \text{H.C.F.} \times \text{L.C.F.}$

$$b = \frac{22 \times 132}{44} = 66$$

03. **B**

$$101101_{(2)} = 2^5 \times 1 + 2^4 \times 0 + 2^3 \times 1 + 2^2 \times 1 + 2^1 \times 0 + 2^0 \times 1 = 32 + 0 + 8 + 4 + 0 + 1 = 45$$

$$110111_{(2)} = 2^5 \times 1 + 2^4 \times 1 + 2^3 \times 0 + 2^2 \times 1 + 2^1 \times 1 + 2^0 \times 1 = 32 + 16 + 0 + 4 + 2 + 1 = 55$$

$$101101_{(2)} + 110111_{(2)} = 45 + 55 = 100 = 1100100_{(2)}$$

04. **E**

Least Prime Number = 2

Least Composite number = 4

Sum = 2 + 4 = 6 Product = 2 x 4 = 8

05. **C** 1 google = 10^{100} C = 100

06. **A** $1\frac{6}{500} = 1 + \frac{6}{500} = 1 + \frac{6 \times 2}{1000} = 1 + 0.022 = 1.022$

07. **D** All of the above

08. **D** $\frac{3}{5} = \frac{3}{5} \times \frac{18}{18} = \frac{54}{90}$, $\frac{2}{3} = \frac{2}{3} \times \frac{30}{30} = \frac{60}{90}$

09. **C** Additive inverse of $5x - 7 = 7 - 5x = 1 \Rightarrow 5x = 6 \Rightarrow x = 6/5$

10. **B**

Let the angle be x

$$(90 - x) : (180 - x) = 1 : 3 \Rightarrow 3(90 - x) = (180 - x) \times 1$$

$$270 - 3x = 180 - x \Rightarrow 2x = 90 \Rightarrow x = 45^\circ$$

11. **C**

Let the numbers be x and y .

$$x + y = p$$

$$x - y = q$$

$$\therefore 2x = p + q \quad 2y = p - q$$

$$\therefore x : y = (p+q) : (p-q)$$

12. **C**

$$l \perp m$$

$$\therefore \angle ABC = 90^\circ$$

N bisects $\angle ABC$

$$\therefore x = y = 45^\circ, \quad x - y = 0^\circ$$

13. **C**

Place value of 8 = 800

$$\frac{3}{5}^{\text{th}} \text{ of } 800 = \frac{3}{5} \times 800 = 480$$

$$\frac{1}{10} \text{ of } 800 = \frac{1}{10} \times 800 = 80$$

$$\text{Product} = 480 \times 80 = 38400$$

14. **A** $a : b = 7 : 8 \Rightarrow \frac{a}{b} = \frac{7}{8}$

$$\frac{4a - \frac{b}{2}}{4a + \frac{b}{2}} = \frac{b \left[4 \left(\frac{a}{b} \right) - \frac{1}{2} \right]}{b \left[4 \left(\frac{a}{b} \right) + \frac{1}{2} \right]} = \frac{4 \times \frac{7}{8} - \frac{1}{2}}{4 \times \frac{7}{8} + \frac{1}{2}} = \frac{3}{4} = 3 : 4$$

15. **A**

No. of chords = 6

No. of radii = 4

No. of diameters = 2

$$6 : 4 : 2 \Rightarrow 3 : 2 : 1$$

16. **B**

'O' is centre

$$Rr = \frac{x^2}{6} + \frac{2x}{3} + 2$$

$$d = \frac{x^2}{3} + \frac{4x}{3} + 4$$

$$3d = x^2 + 4x + 12$$

17. **C** $2\pi r = 44 \Rightarrow r = \frac{44 \times 7}{2 \times 22} = 7$

18. **D**

$a > 0, b < 0, ab < 0$

The additive inverse of $ab = -ab$

$\therefore a \times b > 0$ (Positive)

19. **D** None

20. **A or B**

$$221 = 10^2 + 11^2 = 100 + 121$$

$$A = 10, B = 11$$

$$(A+B)^2 = (10+11)^2 = (21)^2 = 441$$

21. **B** Improper fraction

22. **B**

$$\frac{7+10+11+a+b+c}{6} = 12$$

$$a + b + c = 72 - 28 \qquad \frac{b+c}{2} = 13$$

$$a + b + c = 44 \qquad b + c = 26$$

$$a + (26) = 44$$

$$a = 44 - 26 = 18$$

23. **C**

$$10x + y$$

$$10(x+2) + (y-2) = 2(10x+y)$$

$$10x + 20 + y - 2 = 20x + 2y$$

$$10x + y = 18$$

24. **B** $0.2 \times 0.0005 \times 0.8 = 0.00008$

25. **A** $\frac{85-80}{80} \times 100 \Rightarrow \frac{5}{80} \times 100 \Rightarrow 6.25$

26. **D** Tamilnadu

27. **C** $\frac{65}{40} = \text{P.SVBR} \Rightarrow 1.6250 = \text{P.SVBR}$

$$\frac{V+B}{P+S+R} = \frac{2+5}{1+6+0} = \frac{7}{7} = 1$$

28. **D** 7744

29. **C** $1 \text{ hr} = 3600 \text{ seconds} \Rightarrow 1 \text{ second} = \frac{1}{3600} \text{ hr} \Rightarrow 1 \text{ Second} = 0.000277 =$

0.00028

30. **C** $\frac{3}{7}x - 28 = \frac{5x}{14} \Rightarrow \frac{3x}{7} - \frac{5x}{14} = 28 \Rightarrow \frac{6x-5x}{14} = 28 \Rightarrow x = 28 \times 14 = 392$

31. **A** $\angle A : \angle B = 4 : 5$

$\angle A : \angle B$ and $\angle B : \angle C$

$$\therefore \angle C : \angle D = \therefore \angle B : \angle A = 5 : 4$$

32. **B**

$$2(l+b) = 45$$

$$l + b = 28$$

$$l + b = S + S$$

$$A = S^2 \quad B = l \times b$$

If a number is divided into two equal parts the product is greater than the product of two unequal parts.

$$[\text{Ex : } 8 = 2+6 = 4 + 4 \quad 4^2 > 2 \times 6] \quad A > B$$

33. **C**

$$y = 90^\circ - 55^\circ = 35^\circ$$

$$z = 180^\circ - 125^\circ = 55^\circ$$

$$\angle B - \angle C = y = 35$$

$$x + y + z = 180^\circ$$

$$x + 35 + 55 = 180^\circ$$

$$x = 90^\circ$$

34. **B**

$$3\angle B = 4\angle B = 6\angle C = x$$

$$\angle A = \frac{x}{3}, \quad \angle B = \frac{x}{4}, \quad \angle C = \frac{x}{6}$$

$$\angle A + \angle B + \angle C = \frac{x}{3} + \frac{x}{4} + \frac{x}{6} = \frac{4x + 3x + 2x}{12} = \frac{9x}{12} = \frac{3x}{4} = 180$$

$$x = \frac{180 \times 4}{3} = 240$$

$$\frac{x}{3} = \frac{240}{3} = 80$$

$$\angle A = 80$$

35. **C**

$$\text{No. of 50 ps } \left(\frac{1}{2} \text{ Re} \right) \text{ coins} = x$$

$$\text{No. of 25 ps } \left(\text{Re } \frac{1}{4} \right) \text{ coins} = 30 - x$$

$$\frac{1}{2}x + \frac{1}{4}(30 - x) = 11$$

$$\frac{1}{2}x + \frac{15}{2} - \frac{x}{4} = 11$$

$$\frac{x}{4} + \frac{15}{2} = 11 \quad x = 14$$

$$30 - x = 30 - 14 = 16$$

36. **A**

$$a : b = 2 : 3 \Rightarrow \frac{a}{b} = \frac{2}{3} \Rightarrow \frac{a+b}{b} = \frac{2+3}{3} \Rightarrow \frac{a+b}{b} = \frac{5}{3}$$

$$a : b = 2 : 3 \Rightarrow \frac{b}{a} = \frac{2}{3} \Rightarrow \frac{a-b}{a} = \frac{2-3}{3} = \frac{-1}{3} = \frac{b-a}{a} = \frac{1}{3}$$

$$\frac{\frac{b-a}{a}}{\frac{b+a}{a}} = \frac{1/3}{5/3} = \frac{1}{5} = 1:5$$

37. **A** $\{-4, -3, -2, -1, 0, 1, 2, 3\}$

38. **C** Secant

39. **A**

$$\frac{p}{a} + \frac{b}{q} = 1 \Rightarrow \frac{b}{q} = 1 - \frac{p}{a} = \frac{a-p}{a}$$

$$\frac{q}{b} + \frac{c}{r} = 1 \Rightarrow \frac{q}{b} = 1 - \frac{c}{r} = \frac{r-c}{r} \Rightarrow \frac{b}{q} = \frac{r}{r-c}$$

$$\frac{a-p}{a} = \frac{r}{r-c} \Rightarrow ar = (a-p)(r-c) \Rightarrow ar = ar - ac - pr + pc$$

$$\Rightarrow ac + pr = pc \Rightarrow \frac{ac}{pc} + \frac{pr}{pc} = 1 \Rightarrow \frac{a}{p} + \frac{r}{c} = 1$$

40. **B** $a^b = b^a \Rightarrow 2^4 = 4^2 \Rightarrow a = 2 \quad b = 4 \Rightarrow a \times b = 8$

41. **C** $\angle AOD + \angle BOC + \angle COD = 45 + x + 20 + 3x - 5 = 180$
 $4x + 60 = 180 \Rightarrow 4x = 120 \Rightarrow x = 30$

42. **A** Maximum = 3
 Minimum = 2

43. **D** \overline{IV}

44. **B** $a\% \text{ of } b = c \Rightarrow \frac{a}{100} \times b = c$

$$b\% \text{ of } c = a \Rightarrow \frac{bc}{100} = a$$

$$c\% \text{ of } a = 1 \Rightarrow \frac{ac}{100} = 1 \Rightarrow ac = 100$$

$$a \times c = \frac{a}{100} \times b = \frac{bc}{100} \Rightarrow b^2 = 100 \times 100 \Rightarrow b = 100$$

45. **D** Infinite

46. **A** $0.625 = \frac{625}{1000} = \frac{5}{8} \Rightarrow 5 \times 8 = 40$

47. **B** $a + b - c = a - (-b + c) = a - (c - b)$

48. **D** girls = x boys = 4x
 20

49. **D** $x + y = 5, xy = 10, \Rightarrow \frac{x+y}{xy} = \frac{5}{10} \Rightarrow \frac{1}{x} + \frac{1}{y} = \frac{1}{2}$

50. **C** $a < 0 \quad |a| = -a \quad a + |a| = a + (-a) = 0$

51. **12** The pattern is + 3, + 4, + 5, + 6, + 7 ie., 5 + 7 = 12

52. **8** The pattern is + 3, + 5, + 7, + 9, + 11 (or)
 Squares of natural numbers

53. **37** Prime Number, all others are composite

54. **Thursday**

55. **150° (or) 210°**

56. **0%**

57. **64** $\frac{20 \times 20 \times 20}{5 \times 5 \times 5} = 4 \times 4 \times 4 = 64$

58. **55** $3050 - 25 = 3025; 3025 \div 55 = 55$

59. **3**

60. **12** $(7 + 5 + 3 + 4) x = 76 \Rightarrow x = 4 \quad \therefore \text{Smallest part } 3x = 12$

