



CLASS : 7 1st MID TERM PORTIONS AND PATTERNS

MATHEMATICS		
Integers	Measurements (till exercise 2.4)	Practical Geometry (Perpendicular Bisector)
I. Choose the correct answer		10 x 1 = 10
II. Do as directed		10 x 2 = 20
III. Answer the following		2 x 5 = 10
IV. Geometry / graph		1 x 10 = 10
		Total 50 marks

SCIENCE		
Measurement	Matter Around Us	The Living World of Plants
I. Choose the correct answer		5 x 1 = 5
II. Fill in the blanks		6 x 1 = 6
III. Match the following		5 x 1 = 5
IV. Answer the following (pick out, spot the error, complete the table, diagrams, problems, q & a)		12 x 1 = 24
V. Answer the detail		2 x 5 = 10
		Total 50 marks

SOCIAL SCIENCE		
HISTORY	GEOGRAPHY	ECONOMICS
Sources of Medieval India	Interior of the Earth, Volcanoes and Earthquakes	Production
I. Choose the correct answer		5 x 1 = 5
II. Fill in the blanks		5 x 1 = 5
III. Match the following		10 x ½ = 5
IV. Captions		4 x 1 = 4
V. Distinguish between		2 x 3 = 6
VI. Answer the following		5 x 3 = 15
VII. Answer in detail		2 x 5 = 10
		Total 50 marks

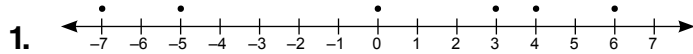
EXPRESSIONS IN ENGLISH		
Seventeen oranges	Sea fever	An Afghan adventure
I. Write the meanings and opposites of the given words.		6 x 1/2 = 3
II. Write prefixes to make opposites.		6 x 1/2 = 3
III. Write two ways of making polite commands		2 x 1 = 2
IV. Write two sentences conveying urgency in a situation.		2 x 1 = 2
V. Make sentences using coordinating conjunctions		5 x 1 = 5
VI. Write a short paragraph about a favourite holiday		4 x 1 = 4
VII. Fill in the blanks with sound words		6 x 1/2 = 3
VIII. Circle the silent letters		3 x 1 = 3
IX. Complete the following sentences		5 x 1 = 5
X. Who said this to whom and why was it said		5 x 1 = 5
XI. Answer the following		5 x 3 = 15
		Total 50 marks



Class: 7 KEY ANSWERS Term: 1

Chapter - 1 Integers

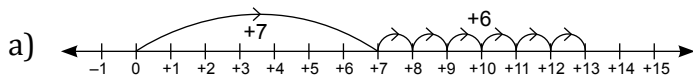
Exercise: 1.1



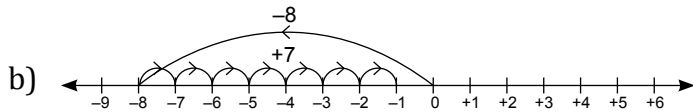
2. a) $+2 > 0$ b) $+5 > -5$ c) $-2 > -3$
 d) $+2 < +3$ e) $0 > -1$ f) $-1 < 0$
 g) $-7 < +7$ h) $-6 > -9$

Exercise: 1.2

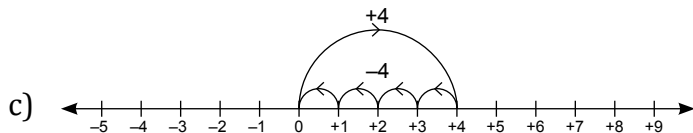
1.



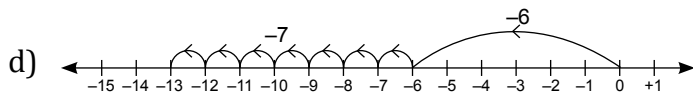
$$(+7) + (+6) = 13$$



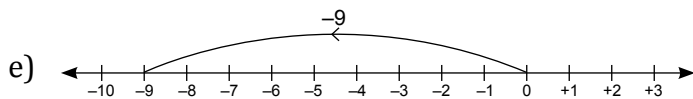
$$(-8) + (+7) = -1$$



$$(+4) + (-4) = 0$$



$$(-6) + (-7) = -13$$



$$(-9) + 0 = -9$$

2. a) 11 b) -13 c) -16 d) -9 e) -123

3. a) $-8 < -5 < -3 < 0 < +6$
 b) $-11 < -9 < -1 < +7 < +8$
 c) $-8 < -6 < 0 < +6 < +8$
 d) $-87 < -26 < -3 < +5 < +79$
 e) $-13 < -2 < 0 < +1 < +21$

4. a) $(-5) + (+15) = 10^\circ\text{C}$

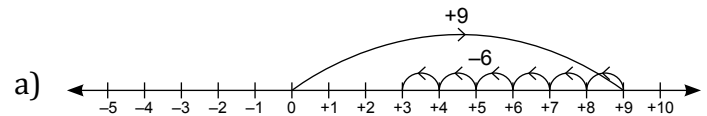
b) $(+8) + (+7) = 15^\circ\text{C}$

c) $(+8) + (-10) = -2^\circ\text{C}$

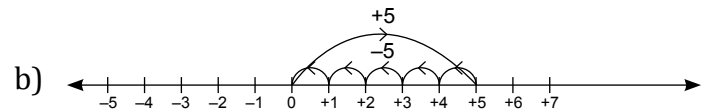
5. $(-2) + (+22) = 20^{\text{th}} \text{ floor}$

Exercise: 1.3

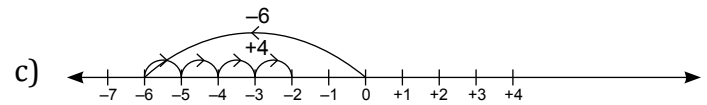
1.



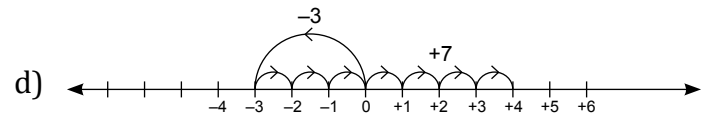
$$(+9) + (-6) = 3$$



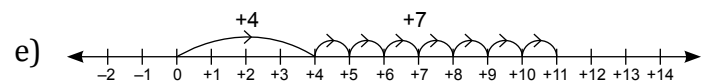
$$+5 + (-5) = 0$$



$$(-6) + (+4) = -2$$



$$(-3) + (+7) = +4$$



$$(+4) + (+7) = +11$$

2. $306 + 550 - 408 = 448$

$$\begin{array}{r} 306 \\ + 550 \\ \hline 856 \end{array} \quad \begin{array}{r} 856 \\ - 408 \\ \hline 448 \end{array}$$

3. $9 - 3 = 6$ meters (height of ledge from ground)

4. $7200 - 8540 = -1340$ meters (minus sign indicates depth since '0' in the ground level)

Exercise: 1.4

- 224
 - +133
 - +700
 - 270
 - +120
- +157520
 - 132500
 - 218800
 - 64464
 - +25530
- $321 \times (1000 + 3) = 32100 + 963 = 321963$
 - $(1000 - 3) \times 83 = 83000 - 249 = 82751$
 - $(100 - 1) \times 63 = 6300 - 63 = 6237$
 - $(1000 - 2) \times (100 + 2) = 100000 + 2000 - 200 - 4 = 101796$
 - $81 \times (1000 + 1) = 81000 + 81 = 81081$

Exercise: 1.5

- Points sania gained in first round = +35

Points sania loses in second round = -44

Points sania gained in third round = +30

Final score = +35 - 44 + 30 = 21 points.
- 8
 - +1
 - 9
 - +5
- Rate at which submarine descends = 60 feet/minute. Time taken to descend 660 feet = $\frac{660}{60} = 11$ minutes.
- Rent of room per month = ₹500. Share that each person should pay = $\frac{500}{4} = ₹125$.
- Negative marks for wrong answers = 2 marks.

Positive marks for correct answers = 4 marks.

Total marks Neerav gets for 15 correct and 4 wrong.

Answers = $(15 \times 4) - (5 \times 2)$

$= 60 - 10 = 50$ marks

Total mark Rajan gets for 14 correct answers.

$= 14 \times 4 = 56$ marks

Rajan got more marks in $(56 - 50) = 6$ marks more than Neerav.
- Cost of each torch = ₹55.50 paise.

Cost of 48 torches = 48×55.50

$= (50 - 2) \times (55 + 0.50)$

$= 2750 + 25 - 110 - 1$

$= ₹2664$.

$$\begin{aligned}
 7. \quad & (-8) \times (+9) + (-11) \times (-6) \\
 & = (-72) + (66) \\
 & = -6
 \end{aligned}$$

	+	0	+1	+2	+3	+4
-5	-5	-4	-3	-2	-1	
-4	-4	-3	-2	-1	0	
-3	-3	-2	-1	0	+1	
-2	-2	-1	0	+1	+2	

Chapter - 2 MEASUREMENTS**Exercise: 2.1**

- $2(l + b)$
- 4 times (3×6)
in perimeter = $4 \times 3 \times 6 = 72$ cm
- $4 \times 3 \times 3 = 36$ cm
- $6 + 3 + (6 - 1) + (7 - 3) = 18$ cm
 - $6 + 1 + (10 - 1) + (6 - 1) = 21$ cm
 - $8 + 3 + 3 + 3 + 2 + 3 + 1 + 3 + 2 + 12 = 40$ cm
- Perimeter of equilateral triangle = $3 \times 6 = 18$ cm

Perimeter of regular hexagon with side 'x' = $6x = 18$ cm

$\therefore$ length of side of regular hexagon, $x = \frac{18}{6} = 3$ cm
- Perimeter of Rectangle = $2(l + w)$

$= 2(8 + 2) = 20$ cm

Perimeter of square with side 'a' = $4a = 20$ cm

Side, $a = \frac{20}{4} = 5$ cm

Exercise: 2.2

- area = $35 \times 35 = 1225$ cm²
- length, $l = 6.32$ cm,

breadth, $b = 3.65$ cm

area = $l \times b = 6.32 \times 3.65 = 23.068$ m²
- Perimeter = 16 cm

L	W	A	Figure
7	1	7	R
6	2	12	R
5	3	15	R
4	4	16	S

Perimeter = 20 cm

L	W	A	Figure
9	1	9	R
8	2	16	R
7	3	21	R
6	4	24	R
5	5	25	S

Perimeter = 24 cm

L	W	A	Figure
11	1	11	R
10	2	20	R
9	3	27	R
8	4	32	R
7	5	35	R
6	6	36	S

R - Rectangle S - Square

Questions:

a) We get more area when sides are comparable length and have more area when it is equal square.

b) Yes square with side = 4 cm

Perimeter = $4 \times 4 = 16$ cm

Area = $4 \times 4 = 16$ cm

c) Yes

L	W	A	P
4	4	16	16
6	2	16	20

d) Yes

4. a) $A = \frac{1}{2} \times 6 \times 5 = 15$

b) $A = \frac{1}{2} \times (3 + 1) \times 4 = 8$

c) $A = \frac{1}{2} \times 12 \times 5 = 30$

d) $A = \frac{1}{2} \times 24 \times 24 = 288$

5. $A = \frac{1}{2} \times 4 \times 10 = 20 \text{ cm}^2$

6. $A = \frac{1}{2} \times 12 \times 4 = 24 \text{ sq.ft.}$

7. $A = \frac{1}{2} \times 18 \times 9 = 81 \text{ cm}^2$

8. $A = \frac{1}{2} \times b \times 6 = 30 \Rightarrow b = 10 \text{ cm}$

9. $A = \frac{1}{2} \times 2 \times h = 96 \Rightarrow h = 96 \text{ cm}$

10. Perimeter of square garden = 4×40
= 160 cm

Cost of fencing/meter = ₹85.

$\therefore$ Total cost = $85 \times 160 = ₹13600$.

Wall	l	b	A	number	area
1	4	3.5	14	2	28 m^2
2	3.5	3	10.5	2	21 m^2

11.

Total area = 49 m^2

Rate = 55 per sq.m

$\therefore$ Cost of painting = 49×55
= $(50 - 1)(50 + 5)$
= $2500 + 250 - 50 - 5$
= ₹2695

12. Area = $\frac{1}{2} \times 1.5 \times 2.3 = 1.725 \text{ m}^2$

13. Perimeter, $4a = 400 \text{ m}$

Side, $a = \frac{400}{4} = 100 \text{ m}$

Area, $a^2 = 100^2 = 10000 \text{ m}^2$

14. Perimeter of square, = $4 \times 20 = 80 \text{ cm}$

if length of rectangle = 16 cm.

then breadth of rectangle = 24 cm

a) length of wire = perimeter of square = 80 cm.

b) Area of square = $20^2 = 400 \text{ cm}^2$.

c) Area of rectangle = $16 \times 24 = 384 \text{ cm}^2$.

Exercise: 2.3

1.

Figure	Dimension	Area	Formula
Square	$a = 4 \text{ cm}$	16 cm^2	(a^2)
Rectangle	$l = 6 \text{ cm}$ $b = 4 \text{ cm}$	24 cm^2	$(l \times b)$
Triangle (1)	$b = 3$ $h = 4$	6 cm	$(\frac{1}{2} b \times h)$
Triangle (2)	$b = 3, h = 4$ $b = 4 \text{ cm},$ $h = 2 \text{ cm}$	4 cm^2	$(\frac{1}{2} \times b \times h)$

Total area = 50 cm^2

2.

Figure	Dimension	Area	Formula
Triangle	$b = 2 \text{ cm}$ $h = 2 \text{ cm}$	2 cm^2	$(\frac{1}{2} \times b \times h)$
Square	$a = 2 \text{ cm}$	4 cm^2	(a^2)
Rectangle	$l = 4 \text{ cm}$ $b = 2 \text{ cm}$	8 cm^2	$(l \times b)$

Total area = 14 cm^2

3.

Figure	Dimension	Area	Formula
Rectangle	$l = 8 \text{ cm}$ $b = 3 \text{ cm}$	24 cm^2	$(l \times b)$
Triangle	$b = 8 \text{ cm}$ $h = 3 \text{ cm}$	12 cm^2	$(\frac{1}{2} \times b \times h)$

4. a) $A = \frac{1}{2} \times b \times h = \frac{1}{2} \times 5 \times 12 = 30 \text{ cm}^2$

b) $A = a^2 = 13^2 = 169 \text{ cm}^2$

c) $A = a^2 = 5^2 = 25 \text{ cm}^2$

d) $A = a^2 = 12^2 = 144 \text{ cm}^2$

5.

Figure	Dimension	Area	Formula
Square	$a = 20 \text{ cm}$	400 cm^2	(a^2)
Triangle	$b = 20 \text{ cm}$ $h = 14 \text{ cm}$	140 cm^2	$(\frac{1}{2} \times b \times h)$

Total area = 540 cm^2

Exercise: 2.4

1. $A = b \times h = 22 \times 6 = 132 \text{ cm}^2$.

2. $A = b \times h = 12 \times 5 = 60 \text{ m}^2$.

3. $A = 72 = b \times b = b \times 9 \Rightarrow b = \frac{72}{9} = 8 \text{ cm}$.

4. $b = 12 \text{ cm}, A = 108 \text{ cm}^2 \Rightarrow \text{height}, h = \frac{108}{12} = 9 \text{ cm}$.

5. $d_1 = 16 \text{ m}, d_2 = 30 \text{ m} A = \frac{1}{2} \times d_1 \times d_2 = \frac{1}{2} \times 16 \times 30 = 240 \text{ m}^2$.

Both Rhombos has same area.

6. Perimeter of rhombus = 60 cm

Side, $a = \frac{60}{4} = 15 \text{ cm}$.

$d_1 = 15 \text{ cm}, d_2 = 20 \text{ cm}$

Area = $\frac{1}{2} \times 15 \times 20 = 150 \text{ cm}^2$

Exercise: 2.5

1. $A = \frac{1}{2} \times (6.6 + 12.4) \times 6 = \frac{1}{2} \times 9 \times 6 = 57 \text{ cm}^2$

2. $A = \frac{1}{2} \times (4.5 + 9) \times 8 = 54 \text{ cm}^2$

3. $A = \frac{1}{2} \times (a + b) h$

a) $A = \frac{1}{2} \times (21 + 24) \times 6 = 135 \text{ cm}^2$

b) $A = \frac{1}{2} \times (1.8 + 2.4) \times 1.5 = 3.15 \text{ m}^2$

c) $A = \frac{1}{2} \times (1.8) \times 1.2 = 1.08 \text{ m}^2$

4. $A = 225 \text{ cm}^2$

$(a + b) = 27 \text{ cm}$

$A = \frac{1}{2} (a + b) h \Rightarrow h = \frac{2A}{a + b} = \frac{2 \times 225}{27} = 16.67$

5. $A = 125.5 \text{ cm}^2$

$a = 7.7 \text{ cm}$

$b = 12.3 \text{ cm}$

$h = \frac{2A}{(a + b)} = \frac{2 \times 125.5}{(7.7 + 12.3)} = \frac{251}{20} = 12.55 \text{ cm}$

6. Area, $A = 65 \text{ cm}^2$,

$h = 13 \text{ cm}$

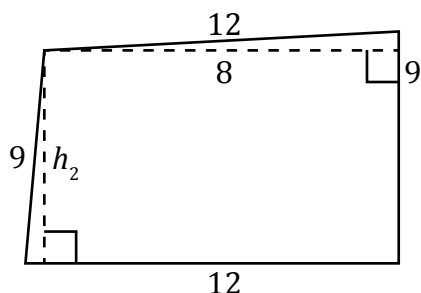
$a = 6.3 \text{ cm}$

$$A = \frac{1}{2}(a+b)h = \frac{1}{2}(6.3+b) \times 13 = 65$$

$$b = 3.7 \text{ cm}$$

More Exercise: 2.6

- length of rectangular ground, $l = 65 \text{ m}$
breadth of rectangular ground $b = 32 \text{ m}$
Area = $l \times b = 32 \times 65 = 2080 \text{ m}^2$
Rate for levelling = ₹3/m².
Total cost for levelling = 3×2080
 $= ₹6240$
- Dimensions of room
length = 9 m
breadth = 7 m
Side of square tile = 0.9 m
Area of a square tile = $0.9^2 = 0.81 \text{ m}^2$.
Number of tiles required = 77.78 tiles.
Rate of tiles = ₹8/tile
Cost of tiling = $\frac{8 \times 63}{0.81} = 622.2$
₹622.2
- Perimeter of the square courtyard = 144 m
Side of courtyard = $\frac{144}{4} = 36 \text{ m}$.
Area of square courtyard = $36^2 = 1296 \text{ m}^2$.
Rate of cementing = ₹660/m²
Cost of cementing = 6.60×1296
 $= ₹8553.6$.
- Distance between shorter sides ie. 9cm sides = 8cm



$$\therefore \text{Area of parallelogram} = 8 \times 9 = 72 \text{ cm}^2$$

Area = distance between longer side $\times$ length longer side

$$\text{ie. } 72 \text{ cm}^2 = h_2 \times 12$$

$$h_2 = \frac{72}{12} = 6 \text{ cm}$$

- Diagonals of the rhombus are $d_1 = 40 \text{ cm}$ and $d_2 = 25 \text{ cm}$

$$\text{Area of rhombus} = \frac{1}{2} \times d_1 \times d_2 = \frac{1}{2} \times 40 \times 25$$

$$= 500 \text{ cm}^2$$

$$\text{Rate of polishing} = ₹5.50/\text{cm}^2$$

$$\text{Cost of polishing} = 5.50 \times 500 = ₹2750$$

- Given $a = 20 \text{ cm}$, $b = 26 \text{ cm}$, $h = 18 \text{ cm}$

$$\text{Area} = \frac{1}{2}(a+b)h = \frac{1}{2}(20+26) \times 18$$

$$= 414 \text{ cm}^2$$

- Trapezium ADCE

Parallel sides: AE and DC

Non parallel sides: AD and CE

$$\text{Area of trapezium} = \frac{1}{2} \times (6+3) \times 6 \left(\frac{1}{2}(\overline{AE} + \overline{DC}) \times \overline{AD} \right)$$

$$= 27 \text{ cm}^2$$

Chapter - 3 ALGEBRA

Exercise: 3.1

-

#	coefficient of x	constant term
(a)	2	-7
(b)	14	-11
(c)	-7	-3
(d)	2	0

-

#	Type of polynomial	Degree
(a)	M	3
(b)	M	1
(c)	M	3
(d)	M	3
(e)	M	2
(f)	B	2

(g)	B	2
(h)	B	2
(i)	T	3
(j)	B	3

Where

M - Monomial

B - Binomial

T - Trinomial

Exercise: 3.2

I. 1. 27 2. -11784 3. -4092

4. 10 5. 10

II. a. $a = 2, b = 1$

1.	$a^2 + b^2 + 2ab = 4 + 1 + 4 = 9$	$(a + b)^2 = (2 + 1)^2 = 9$
2.	$a^2 - 2ab + b^2 = 4 - 4 + 1 = 1$	$(a - b)^2 = (2 - 1)^2 = 1$
3.	$(a + b)(a - b) = 3 \times 1 = 3$	$a^2 - b^2 = 4 - 1 = 3$
4.	$a^3 - b^3 = 23 - 13 = 10$	$(a - b)(a^2 + ab + b^2) = (1)(4 + 2 + 1) = 7$
5.	$A^3 + b^3 = 23 + 13 = 36$	$(a + b)(a^2 - ab + b^2) = (3)(4 - 1 + 1) = 9$

b. $a = 11, b = 18$

	LHS	RHS
1.	$a^2 + b^2 + 2ab = 121 + 64 - 176 = 9$	$(a + b)^2 = 32 = 9$
2.	$a^2 - 2ab + b^2 = 121 + 176 + 64 = 361$	$(a - b)^2 = 192 = 361$
3.	$(a + b)(a - b) = 3 \times 19 = 57$	$a^2 - b^2 = 121 - 64 = 57$
4.	$a^3 - b^3 = 1331 + 512 = 1843$	$(a + b)(a^2 + ab + b^2) = 19 \times (121 - 88 + 64) = 1843$
5.	$a^3 + b^3 = 1331 - 512 = 819$	$(a + b)(a^2 - ab + b^2) = 3 \times (121 + 88 + 64) = 819$

III. 1. area = $l \times b = 4 \times 3 = 12 \text{ cm}^2$

Perimeter = $2(l + b) = 2(4 + 3) = 14 \text{ cm}$

2. area = $l \times b = 12 \times 7 = 84 \text{ cm}^2$

Perimeter = $2(l + b) = 2(12 + 7) = 38 \text{ cm}$

IV.

#	Dimensions	Volume = $l \times b \times h$	Surface area = $2(lb + bh + hl)$
1.	$l = 5 \text{ cm},$ $b = 4 \text{ cm},$ $h = 3 \text{ cm}$	$5 \times 4 \times 3 = 60 \text{ cm}^3$	$2(5 \times 4 + 4 \times 3 + 3 \times 5) = 2(20 + 12 + 15) = 94 \text{ cm}^2$
2.	$l = 15 \text{ cm},$ $b = 7 \text{ cm},$ $h = 2 \text{ cm}$	$15 \times 7 \times 2 = 210 \text{ cm}^3$	$2(15 \times 7 + 7 \times 2 + 2 \times 15) = 2(105 + 14 + 30) = 298 \text{ cm}^2$

V. 1. 2 cubed = $2^3 = 2 \times 2 \times 2 = 8$

3 squared = $3^2 = 3 \times 3 = 9$

2. thrice 7 = $3 \times 7 = 21$

7 cubed = $7^3 = 7 \times 7 \times 7 = 343$

3. $5x = 5$ times x

$x^5 = x \times x \times x \times x \times x$

If $x = 2$ then $5x = 10, x^5 = 25 = 32$

4. Area = a^2 if $a = 16$ then Area = $16^2 = 256$

VI. 1. a. 2×2 2. b. 5

3. b. 1 4. b. 1

5. c. 25 6. a. 75

7. b. 1 8. b. -6

9. a. 6 10. b. 5

Exercise: 3.3

I. 1.

My age	My son's age
$2x$	x
5 years hence $(2x + 5)$	$(x + 5)$
4 years before $(2x - 4)$	$(x - 4)$

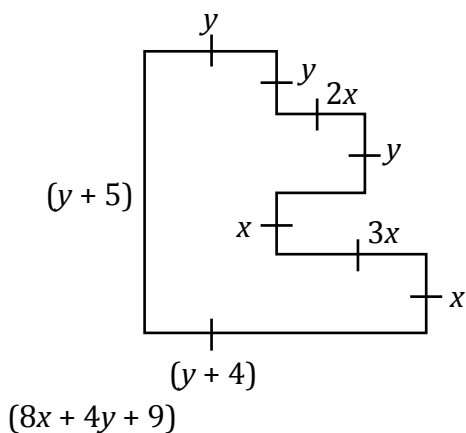
II. 1) $2(x + 3)$

2) $4x + 2y + 14$

3) Data missing $(8x + 4y + 9)$

4) $2x + 4y + 6$

5) $4(x + y)$



III.

#	Expression (simplified)	# of terms	Variables	Constants
1.	$4b - a$	2	a, b	-
2.	$-5a + 17c + 3$	3	a, c	3
3.	$a^2 - 14a - 10b + 15c$	4	a, b, c	-
4.	$7a - 5d$	2	a, d	-
5.	$xyz + 15$	2	x, y, z	15

IV. 1. Let pens be 'x' and 'y' be pencil, expression = $11x + 5y$

2. Perimeter of rectangle = $2(x + y + z) = 2x + 2y + 4$

3. Let red ball be 'x' and green ball be 'y'

Total number of balls = $4x + 5y$

Two green balls removed

Total number of balls = $4x + 3y$

4. a. $6x^2 + 13xy^2$

b. $-3a - 6b + 18$

c. $-8x - 11y + 7$

d. $9a^2b - 3ab^2 - 2ab$

V. 2. $6a + b$

3. $4x + 10y$

4. abc

5. $8x + 27y$

6. $2xyz - 8$

VI. 1. d. 0

2. a. $2a, -3a$

3. a. $-2x, -3y$

4. c. $4a$

Exercise: 3.4

I. 1. $x = 3$ 2. $x = -1$ 3. $x = \frac{7}{2}$

4. $x = 6$ 5. $x = 9$ 6. $z = 8$

7. $x = 3$ 8. $a = -12$ 9. $x = 2$

10. $y = \frac{-48}{5}$

II. 1. $x = -2$ 2. $y = -5$ 3. $x = 30$

4. $x = \frac{-3}{2}$ 5. $x = 7$

III. 1. c. 10 2. a. 8 3. b. $(5x = -10)$

4. d. none 5. b. $-x = 2$

IV.

1. $(9x - 5) - (2x + 2) = 9x - 2x - 5 - 2 = 7x - 7 = 7(x - 1)$

2. Let x be the number

$$\text{Given } \frac{x-9}{2} = 4 \Rightarrow x - 9 = 8 \Rightarrow x = 17$$

3. Let the largest number be x

$$x + (x - 1) + (x - 2) = 72 \Rightarrow 3x - 3 = 72$$

$$\Rightarrow x - 1 = 24$$

$$\Rightarrow x = 25$$

Largest number is 25

4. Let age of Aaron be x

Then age of Rony is $x + 5$

Four years later $2(x + 4) = x + 9$

$$\Rightarrow 2x + 8 = x + 9 \Rightarrow x = 1$$

Present age of aaron = 1 year

Present age of Rony = $1 + 5 = 6$ years

5. Let the number of boys be 'x', then number of girls is $(x + 8)$

$$\text{Given condition } \frac{3}{5x} = \frac{1}{5}(x + 8)$$

$$\therefore 2x = 8 \Rightarrow x = 4$$

No. of boys = $x = 4$ boys

No. of girls = $x = 12$ girls

Total students = $(12 + 4) = 16$ students

6. Let breath of rectangle be 'b' then length $l = b + 5$, Perimeter of the rectangle

$$\begin{aligned}
 p &= 2(l + b) \\
 &= 2(b + 5 + b) = 4b + 10 \\
 \text{Given } P &= 50\text{cm} \Rightarrow 4b + 10 = 50 \Rightarrow 4b = 40 \\
 &\Rightarrow b = 10\text{cm} \\
 \text{Length of rectangle} &= b + 5 = 15\text{cm} \\
 \text{Breath of rectangle} &= b = 10\text{cm}
 \end{aligned}$$

7. Let side of square be 'a'
 Perimeter, $4a = 64$
 $\therefore a = 16\text{cm}$
 Side of square, $a = 16\text{cm}$
8. Let after 'x' years father's age will be double that of son the
 $(40 + x) = (12 + x) \times 2 \Rightarrow 40 + x = 24 + 2x$
 $\Rightarrow x = 16$
 After 16 years fathers age will be 56 and son age will be 28, (half the age of father)
9. length = 7cm width = $(x - 8)$
 $\text{Area} = 7 \times (x - 8) = 42\text{cm}^2 \Rightarrow x - 8 = 6 \Rightarrow x = 14$
10. Let the number be 'x'
 Condition: $\frac{3}{5}x = 4 + \frac{1}{2}x \Rightarrow (\frac{3}{5} - \frac{1}{2})x = 4$
 $(\frac{6-5}{10})x = 4 \Rightarrow x = 40$
 The number is 40

H.O.T.S:

1. Let Anand age be 'x', then sister age is $x = 2$, father age is $x + 25$
 $\text{Given } x + (x + 2) + x + 25 = 53 \Rightarrow 3x + 27 = 53$
 $3x = 26 \Rightarrow x = \frac{26}{3}$
 Anand age is $\frac{26}{3}$ and Father's age is $\frac{101}{3}$
2. Let breadth of rectangle be 'b'
 Then length = $b + 3$
 $\text{Area of rectangle} = b(b + 3)$
 Length and breadth is increased by 2 cm
 $\therefore$ New length = $b + 5$
 Breadth = $b + 2$
 New area = $(b + 5)(b + 2)$
 New area = old area + 70

$$\begin{aligned}
 &\Rightarrow b^2 + 7b + 10 = b^2 + 3b + 70 \\
 &\Rightarrow 4b = 60 \\
 &\Rightarrow b = 15\text{ cm} \\
 \therefore \text{length} &= b + 3 = 18\text{ cm} \\
 \text{breadth} &= b = 15\text{ cm.}
 \end{aligned}$$

Chapter - 4 DIRECT AND INVERSE PROPORTION

Exercise: 4.1

- $4:5 = 8:10 = 40:50 = 12:15$
 - $3:4 = 9:12 = 30:40 = 12:16$
- Teacher student ratio is
 $50:800 = 1:16$ (in school)
 $5:20 = 1:4$ (in daycare)
 (kids need more care)
- $25000:300 = 250:3$
 - $4000:250 = 16:1$
 - $5000:700 = 50:7$
- $1000:200 = 5:1$
 - $190:1000 = 19:100$
 - $200:950 = 4:19$
- They are not equivalent $\frac{6}{8} \neq \frac{16}{12}$
 6 bags of rice and 8 bags of sugar is equal to 12 bags of rice and 16 bags of sugar
 - $\frac{1}{5} \neq \frac{2}{20}$ They are not equivalent
 1 train every 5 minutes to 4 trains every 20 minutes are equivalent
- $56 \times \frac{2}{7}$ and $56 \times \frac{5}{7}$ ie. 16 and 40 students.
 - $3500 \times \frac{3}{5}$ and $3500 \times \frac{2}{5}$ ie. 2100 and 1400
 - $2 \times \frac{13}{12}$ and $2 \times \frac{9}{12}$ ie $\frac{1}{2}$ hrs and $1\frac{1}{2}$ hrs
- In Proportion
 - Not in proportion 3:4 and 150:200 are in proportion

c. Not in Proportion 16:256 and 11:176 are in proportion

8. a. $x = 11$ b. $y = 9$ c. $a = 0.2$

9.

Mangoes	Weight	Mangoes	Weight
4	$\frac{2800}{3}$	11	$\frac{7700}{3}$
7	$\frac{4900}{3}$	15	3500
10	$\frac{7000}{3}$	12	2800

10. a. Total eggs = $10 \times 2 = 120$ eggs
Number of cracked eggs = 25
Ratio of good eggs to cracked eggs is 95:25
ie. 19:5

b. $1:21::30:x$ then $x = 21 \times 30 = 630$ students

c. Copper to tin ratio is 3:1 ratio used for production $x : 40$

copper used $x = 40 \times 3 = 120$ gms

Exercise: 4.2

- Time taken = $\frac{620}{10} \times 10 = 310$ minutes
- Total time taken = 1 hr 45 min = 105 min
Fuel consumed = $105(\text{min}) \times 240(\frac{\text{lt}}{\text{mm}}) = 25200\text{lt.}$
- Let the number of days in a month be 30 days.
Therefore total energy consumption in a month = $30 \times 2 = 60\text{kwhr}$
- Time taken to cover 2km is $2000\text{m} = \frac{2000}{4} \times 5 = 2500\text{mm}$
Distance farred in 4 hours = $240 \text{ min} = \frac{240}{5} \times 4 = 192\text{m}$
- News paper printed in 1 hr is 2000 news paper.
Therefore in 8 hrs 16000 newspapers will be printed.

Exercise: 4.3

- a. Inverse variation
b. Direct variation

c. They are not in proportion

2. a.

x	$\frac{85}{8}$	24	$\frac{17}{8}$	16	3.4	$\frac{119}{80}$	0.4
y	25	$\frac{960}{17}$	5	$\frac{640}{17}$	8	3.5	$\frac{16}{17}$

b.

a	3.6	12	8	90	20	6
b	100	30	45	4	18	60

c.

x	7	2.5	5	15	60	21.6
y	8.4	3	6	18	72	25.92

3. 1. d) ₹693

2. (inverse variation) c) 60 days

3. c) ₹10,000

4. c) 200km

5. b) 100kg

6. $\frac{30}{6} \times 25 = 125$ day of work

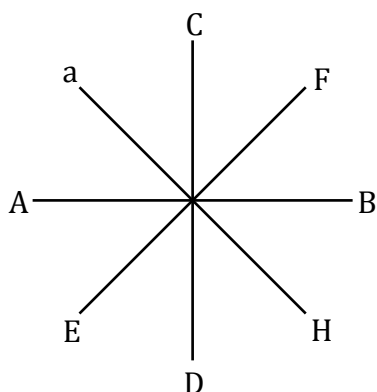
7. $48 \times 45 = 36 \times x \Rightarrow x = 60\text{km/hr.}$ (Inverse variation)

8. Inverse variation $35 \times 8 = 20 \times x$
 $x = 14$ is it will take 14 days.

Chapter - 5A GEOMETRY

Exercise: 5.1

- a. $\angle FOB$ and $\angle BOH$
b. $\angle AOD$ and $\angle BOD$



2. $\angle AOE$ and $\angle EOB$ are adjacent angles
They have common arm OE
3. a. 90 degree b. 180°
c. 90 degree d. 180°

Exercise: 5.2

1. $XY \perp YZ$

$$\therefore \angle XYO + \angle OYZ = 90^\circ$$

$$\angle XYO + 25^\circ = 90^\circ$$

$$\angle XYO = 65^\circ$$

2. $\angle POA + \angle y + \angle x + \angle BOR = 180^\circ$

$$(\angle AOB = 180^\circ)$$

$$\angle x + \angle y = 180 - 34 - 35 = 111^\circ$$

$$\angle x = 111^\circ - 51^\circ = 60^\circ$$

3. PQ is straight line

$$\text{Therefore } \angle QOY + \angle x + \angle POS = 180^\circ$$

$$\angle x = 170^\circ - 95^\circ - 60^\circ = 25^\circ$$

XY is also a straight line

$$\text{Therefore } \angle y = 60^\circ \text{ [Vertical opposite angles]}$$

$$OR \perp OP \quad \angle y + \angle z = 90^\circ$$

$$\angle z = 90^\circ - 60^\circ = 30^\circ$$

4. $\overleftrightarrow{CD}$ is a straight line

$$\text{ie. } \angle x + \angle EOB + \angle BOD = 180^\circ$$

$$\angle x = 180^\circ - 69^\circ - 55^\circ = 56^\circ$$

EF is a straight line

$$\text{ie. } \angle y + \angle BOD + \angle EPB = 180^\circ$$

$$\angle y = 180 - 69 - 55 = 56$$

$$\angle x = \angle y$$

[vertical opposite angles are equal]

Exercise: 5.3

1. a. $\angle b = 180 - 105 = 75$ [Linear pairs]

$$\angle a = 75 = \angle b \text{ [Corresponding angles]}$$

$$\angle d = 105 \text{ [corresponding angles]}$$

$$\angle c = 180 - 105 \text{ [Linear pair]}$$

- b. $\angle 1 = 180 - 90 = 90$ [Linear pair]

$$\angle 4 = \angle 1 = 90 \text{ [corresponding angle]}$$

$\angle 2$ and $\angle 3$ cannot be found from the given information.

- c. $\angle c = 120$ [corresponding angles]

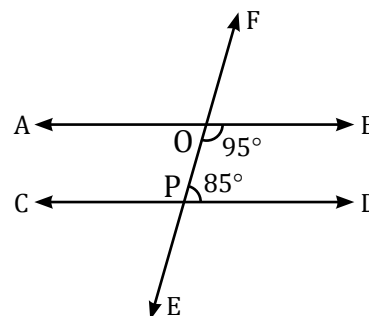
$$\angle a = 180 - 120 \text{ [Linear pair]}$$

$$\angle b = \angle a = 120 \text{ [vertically opposite angles]}$$

2. a. $\angle FOB = 180 - 95 = 85$ [Linear pair]

$$\angle FOB = \angle OPD = 85$$

Therefore $\overleftrightarrow{BA}$ is $\parallel$ to $\overleftrightarrow{CD}$

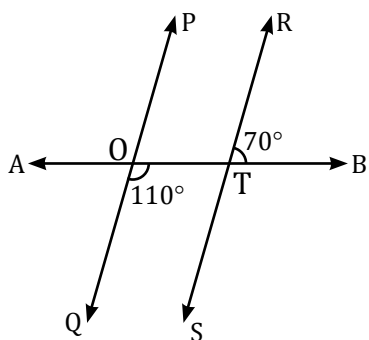


- b. $\angle BTR = 70$

$$\text{Therefore } \angle BTS = 180 - 70 = 110 \text{ [Linear pair]}$$

$$\angle BTS = \angle TOQ = 110$$

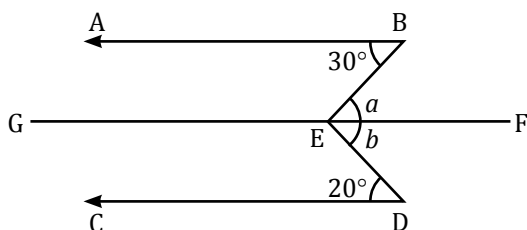
$\therefore \overleftrightarrow{PQ}$ and $\overleftrightarrow{RS}$ are $\parallel$ because corresponding angles are equal.



3. Draw a line AF || to AB and CD through E

Therefore $\angle a = 30^\circ$ $\angle b = 20^\circ$ - alternate interior angles are equal.

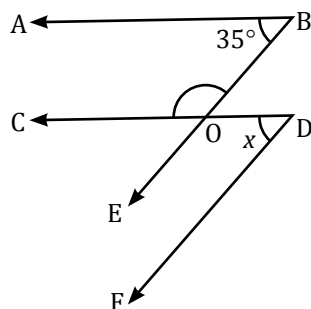
$$\angle x = \angle a + \angle b = 30 + 20 = 50$$



4. $\angle BOD = 35^\circ$ [AB || CD, $\angle BOD$ and $\angle OBA$ are alternate interior angles]

$$\angle y = 180 - 35 = 145^\circ \text{ [Linear pair]}$$

$\angle x = \angle BOD = 35^\circ$ [BE || DF, $\angle BOD$ and $\angle x$ are alternate interior angles]



5. $\angle x = 120^\circ$ [BC || EF, $\angle BCE$ and $\angle x$ are corresponding angles]

$\angle y = 120^\circ$ [AB || CD, $\angle BCE$ and $\angle y$ are alternate interior angles]

6. Extend the edges of parallelogram as shown in figure.

$$\angle EAB = 180^\circ - 108^\circ = 72^\circ \text{ [Linear pair]}$$

$\angle x = \angle EAB = 72^\circ$ [AD || BC, $\angle EAB$ and $\angle x$ are alternate interior angles]

$\angle CBG = 108^\circ$ [AD || BC, $\angle CBG$ and $\angle DAB$ are corresponding angles.]

$\angle y = \angle CBG = 108^\circ$ [DC || AB, $\angle y$ and $\angle CBG$ are alternate interior angles.]

Opposite angles of a parallelogram are equal.

Chapter - 5B PRACTICAL GEOMETRY

Exercise: 5.4

Student's work

Chapter - 6 INFORMATION PROCESSING

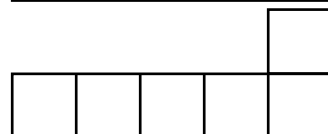
Exercise: 6.1

1. **Note:** All Questions below

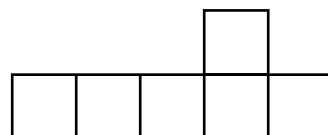
Draw in a graph paper and colour differently, use squares.



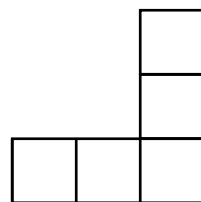
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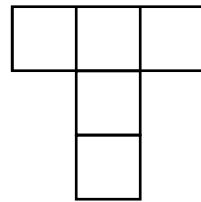
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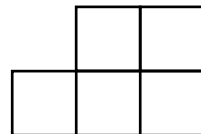
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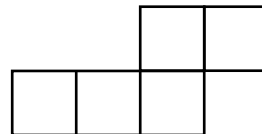
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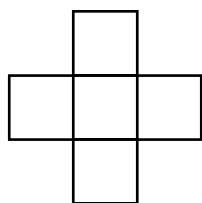
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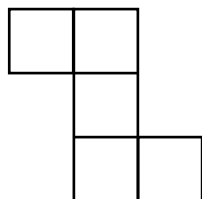
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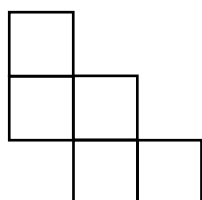
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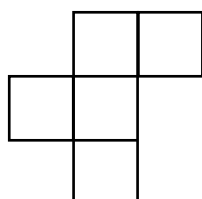
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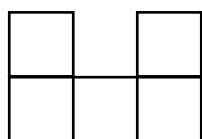
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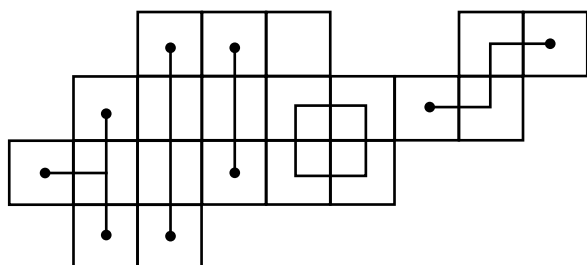
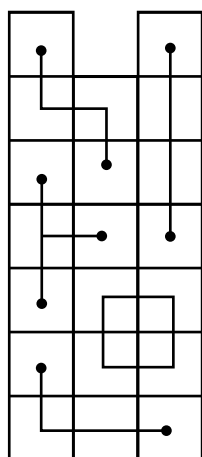


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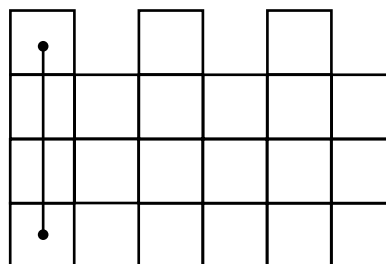


U

2.

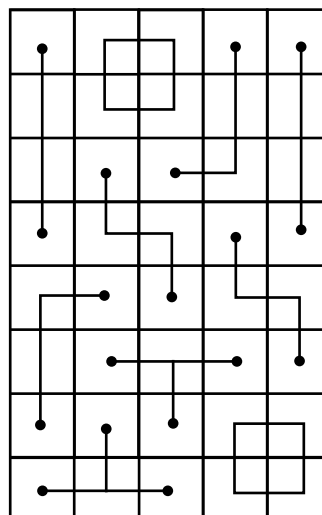


TILON



c. Not possible to cut without repetition

3.



4. Answer may vary. Left to the students [Hint: It is not possible only using tetrominoes. You may have to use monominoes, dominoes, trominoes]

5. (1) and (2) are of same shape.

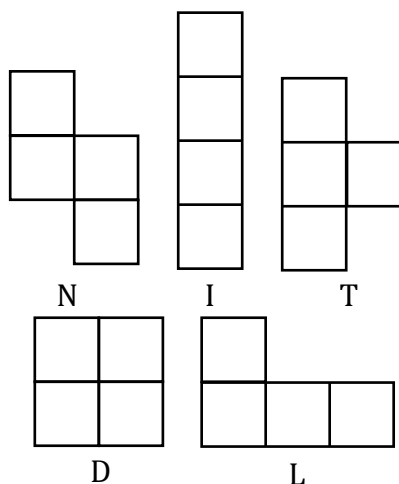
Move (1) 5 squares to right, we get (2)

$\Rightarrow$ (2) and (3) are of same shape.

$\Rightarrow$ Move (2) 5 squares to right and 2 squares upward we get (3).

$\therefore$ (1), (2), (3) are of the same shape.

6.



N

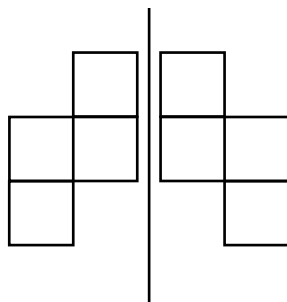
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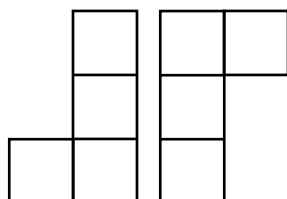
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a)

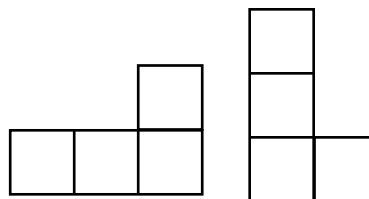


Reflection



Translation → 3 units right

Rotation → 180



Rotation → 90

Translation → 3 units right

Exercise: 6.2

Note: Questions 1,2,3 answers may vary, left to students

4. House → Garden, 15 km is the shortest way.

House → Airport → Playground → Garden
[distance = $25 + 17 + 6 + 5 + 30 = 83$ km]

House → supermarket → Airport →
Playground → Garden

[distance = $7 + 30 + 17 + 6 + 5 + 30 = 95$ km]



Class: 7 KEY ANSWERS TERM : I

Chapter 1 MEASUREMENT

I. 1. Mass

2. Speed

3. kgm^{-3}

4. Sinks in kerosene

5. 1:2

II. 1. Length and time

2. Area

3. 154 mm^2

4. Graphical method

5. 4500 cc

6. 8m

7. 100 cm^3

8. $9.46 \times 10^{15} \text{ m}$

9. An astronomical unit

10. Greater

III. 1. False

2. False

3. False

4. False

5. False

IV. 1. Lightyear - Distance

2. kg/m^3 - Density

3. cm^2 - Area

4. g - Mass

5. Litre - Volume

V. 1) a

2) b

3) c

VI. 1. Physical quantities that cannot be expressed in terms of any other quantities are called *fundamental quantities*. Eg. Length, time.

2. Physical quantities that can be expressed by multiplication or division of fundamental quantities are called *derived quantities*. Eg. Area, Volume

3. *Area* gives the amount or extent of a surface. The SI unit used to describe area is square meter (m^2).

4. Pluck a leaf with a flat surface from any plant in your school. Spread a graph sheet containing square millimeters and square centimeters on a flat surface of the table. Place the leaf on the sheet without any folds, trace its outline with a pencil and remove the leaf. Count the number of complete centimeter squares within the outline = $___ \times 100 \text{ mm}^2$. Count the number of complete millimeter squares within the outline = $___ \text{ mm}^2$. Count the number of millimeter squares that are more than half inside the outline = $___ \text{ mm}^2$. Neglect the millimeter squares that are less than half inside the outline. The Total surface area of the leaf (adding all the above) = $___ \text{ mm}^2$.

5. *Volume* is the actual space occupied by a body. It is the amount of three-dimensional space an object occupies. The SI unit to describe volume is cubic meter (m^3).

6. Fill an overflowing jar with water up to brim; keep an empty measuring jar below the spout. Using a fine silk thread, immerse the stone in the water carefully. The water overflowing is collected in the measuring jar. The volume of water collected in the measuring jar gives the volume of the stone.

7. *Density* is defined as mass of the body contained in its unit volume. The SI unit used for density is kg/m^3 .



8. When a body is heated, particles present in the body tend to move apart and it expands. There is no change in its mass, while there is an increase in its volume. Hence the density of the body decreases.
9. A solid body sinks in water (liquid) if the density of the solid is more than that of water. Stone have higher density than water, so they sink. On the other hand wood have lesser density than water, hence they float on the surface of water. We can conclude that a solid body floats in a liquid if its density is less than the density of the liquid, and it does not dissolve in the liquid.
10. An *astronomical* unit is the average distance between the earth and the sun. It is approximately 150 million kilometers. Astronomical unit is used to express distance within the solar system. One *light year* is the distance that light travels in one year. 1 light year = 9.46×10^{15} m.

VII. H.O.T.S

1. a) Density of A and B are same. Equating density we get ratio of mass as 8:1.
b. Volume ratio is same as mass ratio for A and B. ie 8:1.
c. Volume of A and C are same. Equating volume we get ratio of mass as 2:1
2. Fill an overflowing jar with kerosene up to brim; keep an empty measuring jar below the spout. Put sugar in kerosene. The kerosene overflowing is collected in the measuring jar. The volume of kerosene collected in the measuring jar gives the volume of the sugar. Using balance measure the mass of sugar. Density can be found from definition, Density = mass/volume.
3. Area of cardboard piece =
Area of bigger square – area of smaller square
= $(20 \times 20) - (6 \times 6) = 364 \text{ cm}^2$.

VIII. Solve the Numerical.

1. $25 \text{ cm}^2 = 0.0025 \text{ m}^2 = 2500 \text{ mm}^2$
2. 16 cm^2
3. 750 cm^3

4. Volume of water that can be poured without spilling = volume of the cylindrical vessel = 2310 cm^3
5. Density of lead = 11.6 g/cm^3
6. Mass of water = $50.25 - 20.25 = 30 \text{ g}$.
Density of water = 1 g/cc
Volume of density bottle = mass/density
= 30 cm^3
Mass of liquid = $40.75 - 20.25 = 20.5 \text{ g}$
Density of liquid = $20.5/30 = 0.683 \text{ g/cm}^3$

Chapter 2 MOTION

- I.
 1. m/s
 2. Decrease
 3. Variable speed
 4. Zero
 5. Graph b
 6. Lowering the position of centre of mass
 7. 1s to 2s
- II.
 1. False. Displacement is a vector quantity which has both magnitude and direction, but distance is a scalar quantity which has only magnitude.
 2. False. A body with more speed travels more distance in more time.
 3. False. All body has mass. It falls because of acceleration due to gravity.
 4. True.
 5. True.
 6. False. Definition of displacement - It is the shortest distance travelled by the body between two points. Displacement can be equal to distance when travelling in same direction. But it can be never more than distance.

III. 1. Displacement

2. Acceleration

3. m/s^2

4. 36 km

5. Velocity

6. Acceleration

7. 9.8 m/s^2

8. Negative

9. Displacement

10. Centre of mass

IV. 1. Unstable

2. Stable

3. Neutral

4. Unstable

5. Unstable

6. Unstable

V. 1. Stable equilibrium

2. Unstable equilibrium

3. Neutral equilibrium

4. Uniform velocity

5. Uniform acceleration

VI. 1. a. Distance is the path travelled by a body between two points. The shortest distance travelled by a body between two points in a fixed direction is called displacement.

b. Speed is the rate of change of distance travelled by the body. Speed is a scalar quantity. Velocity is the rate of change of displacement. Velocity is defined in terms of displacement, it is also a vector quantity.

c. Acceleration is said to be uniform when the change in velocity is equal in equal intervals of time. If the change in velocity of a body is not equal in equal intervals of time, then the body is said to undergo non-uniform acceleration.

d. When the centre of mass of a body lies below the point of suspension or support, the body is said to be in stable equilibrium. When the centre of mass of a body lies above the point of suspension or support, the body is said to be in unstable equilibrium. When the centre of mass of a body lies at the point of suspension or support, the body is said to be in neutral equilibrium.

2. Average velocity is the total displacement by time taken.

$$\text{Average velocity} = \frac{\text{total displacement}}{\text{total time taken}}.$$

SI unit of Average velocity is m/s .

3. Acceleration is the rate of change of velocity. It is given by the formula,

$$\text{Acceleration} = \frac{\text{change in velocity}}{\text{time interval}}$$

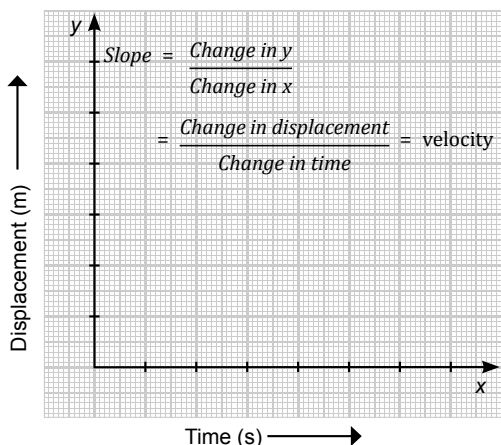
$$\begin{aligned}\text{Unit of acceleration} &= \frac{\text{unit of velocity}}{\text{unit of time}} \\ &= \text{m/s} \times 1/\text{s} = \text{m/s}^2.\end{aligned}$$

4. If the velocity of the body increases with time, it is said to accelerate (positive acceleration) If the velocity of the body decreases with time, it is said to decelerate or retard. Deceleration is negative acceleration.

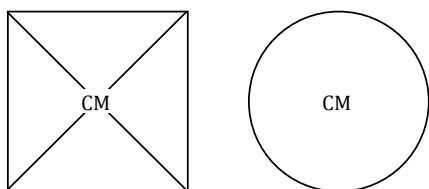
5. All bodies on the surface and above the earth are pulled towards the centre of the Earth because of gravitational force of attraction. The acceleration produced due to this attraction is called acceleration due to gravity, denoted by ' g '. The average value of ' g ' is taken as $+9.8 \text{ m/s}^2$ when a body falls to the ground, while it is taken as -9.8 m/s^2 when a body moves away from the earth. Thus a body is decelerated as it moves away from the earth and accelerated as it approaches the earth.

6. In a displacement-time graph, the time is taken on X-axis and the displacement of the body is taken on Y-axis. Velocity of the body can be found from this graph using the slope.

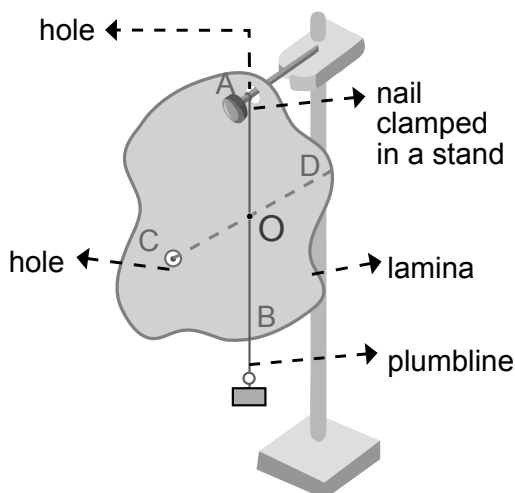




7. The centre of mass of regularly shaped objects lies at the geometric centre of the object.



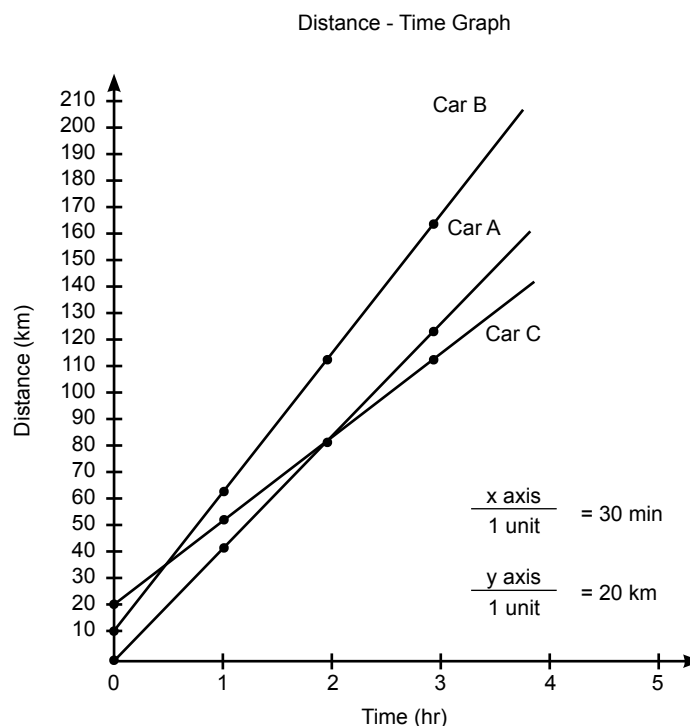
8. Make holes at random positions on the lamina as shown in the figure. Hang the lamina on a nail fixed on a stand so that the lamina can swing freely. Hang the lamina through hole A. It will come to rest with centre of mass vertically below the point A. To find the vertical line from A, tie a plumb line (a thread and a weight) to the nail. Mark the position of the thread on the lamina (in the figure it is AB). The centre of mass of the lamina lies somewhere on this vertical line. Now hang the lamina by the hole C. Do the same process and the centre of mass lies somewhere on the vertical line CD. The point of intersection of AB and CD, O, is the centre of mass of the lamina.



9. The position of the centre of mass of a body tells whether the body will topple over or not. This is important in the design of tall vehicles, racing cars, reading lamps etc.
10. The stability of a body is increased by
- lowering the position of its centre of mass
 - increasing the area of its base

VII. Solve the numerical:

1. Distance (path ABC) = $4 + 3 = 7$ km
 Distance (path AC) = Hypotenuse of the triangle = 5 km
 Displacement (path AC) = shortest distance = Hypotenuse of the triangle = 5 km
2. a.



//Use Graph Sheet//

- b. All cars have initial velocity.
 Car A = 40 km/hr
 Car B = 50 km/hr
 Car C = 30 km/hr
- c. Graph of car B is steepest. Car B has highest velocity is 50km/hr.
- d. Car Average Speed
- | | |
|---|---------------------------------|
| A | $\frac{160 - 0}{4} = 40$ km/hr |
| B | $\frac{210 - 20}{4} = 50$ km/hr |
| C | $\frac{410 - 20}{4} = 30$ km/hr |

$$3. \text{ Average speed} = (4 + 2 + 1) / (32 + 22 + 16) = 0.1 \text{ km/min}$$

$$4. \text{ Acceleration } (9.8 \text{ m/s}^2) = (\text{change in velocity}) / (\text{time taken, } t) = (49 - 0) / t$$

$$\text{Time taken, } t = 49 / 9.8 = 5 \text{ s.}$$

$$5. \text{ Average Acceleration } (3.1 \text{ m/s}^2) = (\text{change in velocity}) / (\text{time taken, } t) = (24.6 - 15.3) / t$$

$$\text{Time taken, } t = 9.3 / 3.1 = 3 \text{ s.}$$

$$6. \text{ Acceleration } (9.8 \text{ m/s}^2) = (\text{change in velocity}) / (\text{time taken, } t) = (\text{final velocity} - 0) / 4$$

$$\text{Final velocity} = 4 \times 9.8 = 39.2 \text{ m/s}$$

VIII. H.O.T.S

1. Since direction is not changing and magnitude of speed is constant, acceleration will be zero.
2. Moving in a circular path with constant speed. Acceleration is due to the change in direction of velocity. Acceleration is a vector quantity.
3. Constant speed does not mean constant velocity. Velocity is vector quantity.

Velocity can change due to change in magnitude or direction or both. Car can move with constant speed in curvy road. Acceleration is created at this situation. A person inside the car experiences this acceleration as force. This we will learn in higher classes as Newton's Law of Motion.

Chapter 3 MATTER AROUND US

I. 1. Elements and compounds

2. Mixtures
3. Metals, nonmetals and metalloids
4. Elements, mass
5. Nitrogen and oxygen
6. Atomicity

II. 1. Nitrogen, Oxygen

2. Sulphur, Carbon

3. Elements and compounds

4. Water, Ammonia

III. 1. The smallest particle of an element is called its atom. Some elements exist in nature as a combination of two or more of its atoms. The general name given to such combined atoms of elements that occur in nature is molecule.

2. An element is the basic and simplest form of matter that cannot be broken down into a simpler chemical substance. A compound is defined as a pure substance containing two or more elements combined with each other in a fixed ratio by mass.

3. Pure substances mean that they contain only one type of particle; all others that have more than one type of particle are impure substances or mixtures.

4. Elements that show most or all of the following properties are called metals.

- They are shiny (lusture).
- They can conduct heat and electricity.
- They can be beaten into sheets (malleable).
- They can be drawn into thin wires (ductile).
- They can make a ringing noise when hit (sonorous).

Elements that show most or all of the following properties are called non-metals.

- They do not shine.
- They generally do not conduct heat or electricity.
- They are not malleable, ductile or sonorous.
- They are soft.
- They exist in all three states of matter.

IV. 1. Mercury – Liquid metal (all other are solid metals)

2. Bromine – Liquid (all others are solids)

3. Iron – Element (all others are compounds)

4. Milk – Impure substance (all others are pure substances)

V. Ans: The assertion is false, but the reason is true.

- VI.** 1. Gaseous at room temperature
2. Carbon
3. Compounds combined to form molecules of compounds
4. Elements

VII. 1. Elements can be represented by symbols. Originally the symbols were all diagrammatic as proposed by Dalton. He also made it clear that the symbol will represent one particle of the element.

2. The number of atoms present in one molecule of the element is also called its atomicity.
3. Elements that have intermediate properties between that of metals and non-metals are called metalloids. Some common examples of metalloids are boron, silicon, arsenic, germanium and antimony.
4. Glucose – $C_6H_{12}O_6$; Ammonia – NH_3 ; Carbon monoxide – CO
5. Latin name of sodium is Natrium. We use 'Na' first two letters as symbol for sodium.
6. Molecule of an element contains more atoms of same kind. Molecules of compounds are formed by different atoms.
7. A change of state directly from solid to gas without changing into liquid state is called sublimation. Some solids like camphor and iodine do not become liquids but directly become vapors on heating.

- VIII.** 1. False
2. True
3. False
4. False
5. True

IX. 1. The particles in a solid are closely packed and cannot move. When we heat a solid in a container, the particles absorb the heat energy and start vibrating in their own

positions. When more heat is supplied the particles gain more energy, break away from their positions and start moving; at this stage the solid slowly gets converted into a liquid and this process is called melting. Let us continue heating, the particles gain more and more energy and start moving faster and the liquid changes into a gaseous state. This process is called boiling. When we continue heating the gaseous particles move faster and further away from each other and eventually move out of the container.

2. Refer question III. 4 and let students try themselves.

X. H.O.T.S

1. On heating the particles in all the three physical states (solid, liquid and gas) gain kinetic energy and expand as they move apart and occupy more spaces. This phenomenon is called 'thermal expansion'. Gases show more expansion than liquids and solids.

2. a.  b.  c. 

Chapter 4 ATOMIC STRUCTURE

- I.** 1. Rutherford 1803 - Planetary model of an atom
2. Thomson 1911 - Water-melon model of atom
3. Dalton 1897 - Atoms cannot be created or destroyed
- II.** 1. Protons and neutrons
2. Protons, electrons
3. Neutrons
4. Valency
5. 3
6. 0.0000000001 m

- III. 1. Both assertion and reason are true. And it is the correct explanation.
2. Both assertion and reason are true. And it is the wrong explanation.

Correct reason: Mass of the electrons is negligible compared to mass of nucleus

3. Assertion is wrong. Reason statement is correct.

Assertion: The number of protons is atomic number.

Reason: The mass number is sum of protons and neutrons.

This is the way how atomic number and mass number is defined.

IV. 1. Electrons

2. Number of protons or number of electrons
3. Carbon

V. 1. Postulates of Dalton's theory are

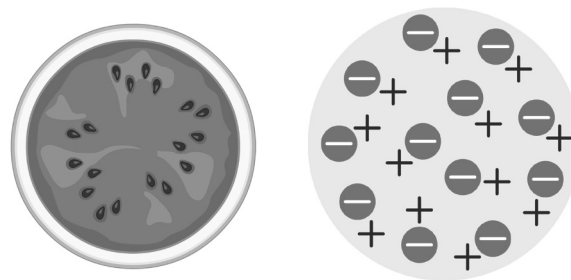
- Matter is made up of tiny indivisible particles called atoms, which can neither be created nor destroyed.
- Atoms of same elements were similar while those of different elements were different in size and mass.
- Atoms of different elements combined to form compounds.

2. Nucleus contains protons and neutrons. Their masses are almost same. Their masses are 2000 times greater than mass of electron. So nucleus is heavier than rest of the atom.

3. Thomson's model proposed the following about the atom:

- Atoms are spherical in shape with positive charge spread throughout them.
- The electrons carrying negative charges were embedded in the sphere randomly, like seeds in a watermelon.
- The positive and negative charges cancelled each other, making the atom neutral in nature.

The model looks similar to a watermelon. So it is also called 'watermelon model'.



4. The total number of electrons in an atom is called its atomic number and is represented by Z .

$Z = \text{atomic number} = \text{no. of } e \text{ in an atom} = \text{no. of } p \text{ in an atom.}$

The total number of particles present in the nucleus of the atom is called its mass number and is represented by A . It is also called the atomic mass of the atom.

$A = \text{total number of particles in atom nucleus} = \text{No. of } p + \text{No. of } n.$

5. In SO_2 , 1 S combines with 2 O; valency of S will be $2 \times 2 = 4$.
6. Na has a valency of 1 and O has a valency of 2. 2 Na will combine with 1 O forming Na_2O .

- VI. 1. Elements with same atomic number but different mass numbers are called isotopes. Isotopes will have same number of electrons and protons but different number of neutrons.

Eg: C_6^{12} and C_6^{14} are isotopes.

Elements with the same mass number but different atomic number are called isobars.

Eg: Ca_{20}^{40} and Ar_{18}^{40} are isobars.

2. All elements have atoms with neutrons except for one. A normal hydrogen (H) atom does not have any neutrons in its tiny nucleus. That tiny little atom (the tiniest of all) has only one electron and one proton. You can take away the electron and make an ion, but you can't take away any neutrons. But in a natural state, atoms are neutral. So it should have equal number of electrons as much number of protons it has.
3. Protons, neutrons, and electrons are the three main subatomic particles found in an atom.

Protons have positive charge, electrons have negative charge and neutrons do not possess any charge.

Electrons are the least massive of an atom's subatomic particles, with a mass of 9.11×10^{-31} kg. Protons have a mass (1,836 times that of the electron) 1.6726×10^{-27} kg, while neutrons are the most massive of the three, at 1.6929×10^{-27} kg (1,839 times the mass of the electron).

4. a. KCl b. FeCl_3 c. Fe_2O_3
d. Ca_2O_2 e. K_2O

- VII. 1** Most of the mass of an atom is possessed by nucleus. So an atom without electrons will have mass (mass cannot be neither created nor destroyed). A normal hydrogen (H) atom has only one electron and one proton. You can take away the electron and make an ion. (ion – unbalanced charged atom).
2. Common salt is sodium chloride, the ionic compound with the formula NaCl, representing equal proportions of elements, sodium (Na) and chlorine (Cl). Ions in common salt are positive sodium ion and negative chlorine ion.

Element	Atomic number	Mass number
Sodium, Na	11	23
Chlorine, Cl	17	37

Chapter 5 THE LIVING WORLD OF PLANTS

I. Choose the correct answer from the following:

- wind
- fragmentation
- mesophyte
- fresh
- male

II. Match the following:

Mint	Herb
Xerophytes	Deserts
Seas	Marine habitat

Unisexual flowers	Papaya
Banyan	Taproots
Corolla	Petals

III. State True or False

1. false 2. true 3. false 4. false

IV. Answer the following questions in one or two lines.

- Depending on their water requirements, plants are classified as hydrophytes, mesophytes and xerophytes.
- Reproduction is the process by which plants produce new individuals or offspring like themselves. Plants reproduce sexually or asexually.
- A stamen has two parts – a thin long stalk called the filament and a knob like structure on top called the anther. The anther contains pollen grains, which contain the male gametes.
- Bees and insects are attracted to both the brightly coloured petals and the sweet fragrance of flowers. While they collect the nectar from flowers, they also help in pollination by transferring pollen grains from the anther to the stigma of flowers.

V. Answer the following questions.

- New plants are produced from other vegetative parts of the plant like the roots, stem and leaves. A part of the plant body gets detached and develops into a new independent plant. You may have observed 'eyes' or buds on the skin of the potato. These can form new plants. In plants, like Bryophyllum, small plantlets develop along the leaf margins. These break off and grow into new plants. Plant parts as you will learn later in the lesson are also modified for vegetative propagation.
- In the taproot system mainly seen in dicots the thick primary root is the dominant root that performs all the important functions. It gives rise to smaller secondary and tertiary roots that spread out in the soil. In the fibrous root system as seen in grasses and other monocots the radicle of the embryo stops growing after a while, and a bunch of roots begin to grow from the base of the

stem. These thread like roots increase the surface area and help in absorption of water and nutrients from the soil.

3. Pollination is the transfer of pollen grains from the anther to the stigma of a flower. Self pollination occurs when the pollen from one flower pollinates the same flower or other flowers on the same plant. Cross pollination takes place when pollen grains from one flower are transferred to a flower from a different plant.
4. Based on their shape there are three main types of roots. In fusiform the modified taproot is thickened in the middle and tapers towards both the ends like a spindle. E.g. Radish. When the modified root is broad at the apex and gradually tapers towards the base like a cone, it is called a conical root or coniform. E.g. Carrot. In Napiform the modified root is swollen at the top and broad at the centre and abruptly tapers into a tail-like portion at the base, giving a top-like appearance E.g. Turnip.

Chapter 6 HEALTH AND HYGIENE

I. Fill in the blanks:

1. balanced diet
2. Flossing
3. Gingivitis
4. obesity

II. State True or False. If false, correct the statement:

1. False
2. False
3. True
4. False

III. Match the following:

Column A	Column B
Vitamin C deficiency	Bleeding gums

Haemoglobin	Red blood cells
Cod liver oil	Anemia
Mycobacterium tuberculosis	Tuberculosis
Communicable disease	Cholera

IV. Answer the following in 1 or 2 sentences:

1. 'Health' is a state of complete physical and mental well being. According to the World Health Organization (WHO), 'Health is a state of complete, physical, mental and social wellbeing and not merely the absence of diseases'.
2. Hygiene is following certain practices that help to ensure cleanliness and good health. Personal hygiene means taking care of our own body, while social hygiene is keeping our surroundings clean.
3. Cataract is a disorder of the eye related to age. The lens in the eye loses its transparency. This condition can be cured by surgery in which the lens of the eye is replaced.
4. A good posture is very important and we must sit up straight, stand straight and walk upright. Good posture gives a graceful appearance to your body and also improves the flexibility of your joints.

V. Answer the following questions.

1. Some ways of protecting our eyes are as follows:
 - Keeping our eyes clean, and washing them two to three times a day with clean, clear water.
 - Eating a balanced diet with plenty of fruits and vegetables
 - Certain diseases like diabetes and high blood pressure affect the eyes. Regular exercise helps control these diseases and lowers the risk of eye problems.
 - Protecting our eyes from direct sunlight by wearing sunglasses.

- Wearing protective eye wear while playing different sports and while working in factories.
 - Avoid sharing towels with others, even at home among family members.
2. Hair must be washed frequently, to remove all the excess oil, dead cells and sweat that collects on it making it look greasy and dirty. Washing, shampooing, combing and brushing it regularly, keeps it clean and healthy. It also keeps away parasites like lice that can irritate the scalp and make it itch. Massaging the scalp also helps improve circulation of blood in the scalp and promotes healthy hair growth.

3.

Communicable diseases	Non- communicable diseases
Communicable diseases can be spread from one person to another	Non- communicable diseases do not spread from one person to another
These diseases are spread by germs / microbes	These diseases are not spread by germs / microbes
Antibiotics and other medicines can be used as a cure	Antibiotics cannot be used as a cure

4. Anemia is a condition when the blood does not contain sufficient healthy red blood cells or haemoglobin. Foods rich in iron that are recommended for people suffering from anemia are green leafy vegetables like spinach, Moringa leaves, peas, beans and lentils and sheep or chicken liver. Supplements like Cod liver oil tablet can also be taken.
5. Burns are classified as follows:
- First degree burns affect only the top layer of the skin and cause reddening.
 - Second-degree burns affect the deeper layers of the skin and can cause blisters.
 - In third-degree burns the tissues of the deepest layer are damaged completely.



Class: 7 KEY ANSWERS TERM : I

HISTORY

Chapter - 1 SOURCES OF MEDIEVAL INDIA

I. Choose the correct answer:

1. i. Firdausi
2. ii. 647 C.E
3. ii. South India
4. i. Al-biruni
5. ii. Thiruvvasagam

II. Pick out the odd one and State the reason:

1.	Amirkhusrau	-	poet	
2.	Artifacts	-evidence of archeology		
3.	Ain-i-Akbari	Biography of Babur	- incorrect pair. Ain-i-Akbari	Biography of Akbar.
4.	copper plate inscription	-	Inscription	

III. Answer the following:

1. If I am a historian, then I will use the following sources to gather the information:
 - Literary
 - Numismatics
 - Inscriptions
 - Archeological Evidence
 - Foreigner's Account
2. The following are the religious literature of the Medieval Period:
 - Kamba Ramayanam by the poet Kambar
 - Sekkizhar's Periyapuramam
 - Nalayara Divya Prabandham composed by Twelve Alvars
 - Moovar Thevaram composed by Appar, Sundarar, Gnanasambandar

- Manicavasagar's Thiruvvasagam
 - 15th century mystic poet Kabir's Dohe
3. Brahadeshwara Temple, Gangai Konda Cholapuram Temple, Khajuraho monuments in Madhya Pradesh by the Rajputs of Rajasthan and The Sun Temple at Konark (Odisha) built by King Narasingha of Ganga Dynasty, Vitala and Virupaksha temples at Hampi by Vijayanagara rulers.
 4. Numismatics means study of coins or medals. Coins are important source of historical information. Even the quality and the material with which the coins are made help archaeologists and historians understand how trade and commerce functioned during the time. It also reflects the advancement in metallurgy during those times.
 5. Whenever I see a historical monument, I feel like gathering the following information:
 - Period in which it built.
 - Person who built it.
 - Materials used and style of architecture followed.

I will feel like maintaining and protecting the monument.

6. He could gather the following information about the Medieval Period:
 - Art and architecture
 - Life style of the people
 - Foreigners who visited the country.
7. The Sun Temple at Konark (Odisha), Vitala and Virupaksha temples at Hampi. A few examples of Islamic architecture such as Balban's Red Palace, the Jamait Khan Masjid, the tomb of Tughluq Shah, the city of Tughluqabad and Kuffa Firoz Shah built by the Tughluqs; Qutub-ud-din Aibak constructed the famous Quwat-ul-Islam



mosque at Delhi, the Dhai-Din ka Jhoupra at Ajmer, and the Qutub Minar in Delhi.

8. a. Rock inscription
- b. As a source
- c. Rock edicts of Khalsi, Ashokan Edicts in Delhi

IV. Answer in detail:

Many foreigners who travelled to India during the period have contributed their accounts of their journey through India in their works. Of the many foreigner accounts available, the following are considered the most important:

1. **Al-biruni** - Iranian scholar and polymath who accompanied Mohammad Ghazni to India and authored Tahqiq ma li-l-hind. For his work, Al-biruni is considered the father of Indology (study of the Indian subcontinent).
2. Italian traveler **Nicolo Conti's** accounts provide the details of the life and customs of the people of India.
3. **Ibn-Battuta**, an explorer from Morocco visited India during the rule of Mohammed-bin-Tughluq, who was considered to be the richest man alive during the time
4. **Domingos Paes**, a Portuguese traveler has written a detailed description of life during the Vijayanagara Empire in south India.
5. Italian traveler **Marco Polo's** account of his journey through India is a rich source of information about the Sultanate period.
6. **Abdur Razzaq**, a Persian traveler came to South India. He stayed in Vijayanagar from 1442 to 1443. He wrote about his experience.

Chapter - 2 RISE OF NEW KINGDOMS – NORTH INDIA

I. Fill in the blanks:

1. Son of a king
2. Sun
3. Sisodias

4. Vesara
5. Suryavanshi clan

II. Write a sentence about the following in your own words:

1. **Prithviraj Chauhan:** Prithviraj Chauhan is considered to be the greatest king of the Chauhan dynasty. A historian **Chand Bardai** has written about the wars and deeds of Prithviraj in his famous book **Prithviraj Raso**.
2. **Mihir Bhoja:** The greatest Pratihara ruler was Mihir Bhoja. He took the title of Adivaraha.
3. **Khajuraho monument:** Khajuraho monuments are group of temples built in the Nagara style during the Rajput period.
4. **Kumbalgarh fort:** The Kumbhalgarh fort in Mewar was built by Rana Kumbha and is known to be the highest fort in Rajasthan.

III. Answer in brief:

1. Rajputs are descended from the thirty-six royal Kshatriya clans. Few are Gujara-Pratihara, Chauhan, Sisodias.
2. AS THEY WISH
3. Suryavanshi – Clans belonging to the Sun Dynasty
Chandravanshi – Clans belonging to the Moon Dynasty
Agnivanshi – Clans belonging to the Fire Dynasty (Agnikula)
4. The Gurjara-Pratihara also known as Pratihara Empire ruled much of Northern India from mid of 8 to 11th century. Dynasty claims its lineage from the **bloodline of Lakshmana. Harichandra (King of Jodhpur)** laid the foundation of the Gujara dynasty. Gujara-Pratihara are known for their sculptures, carved panels and temples. The greatest style of their temple building was at Khajuraho, now a UNESCO World heritage site.

IV. Answer in Detail:

1. The **Chauhans** were powerful kings. The Chauhans ruled between 956 C.E and 1192 C.E.

Prithviraj is considered to be the greatest king of the Chauhans on whom the most records exist from multiple sources, including folk tales and historical records. A historian **Chand Bardai** has written about the wars and deeds of Prithviraj in his famous book **Prithviraj Raso**.

Prithviraj Chauhan also managed to repel the attacks by Mohammed Ghori in the **First Battle of Tarain** (1192 A.D.) He was defeated and killed a year by Mohammed Ghori later in the **Second Battle of Tarain**.

The kingdom broke into the Satyapura and Devda branches after the invasion of Qutubuddin Aibak (first sultan of Delhi Sultanate) in 1197.

Chapter – 3 INVASIONS FROM THE NORTH AND RISE OF ISLAMIC RULE

I. Choose the correct answer:

1. Muhammad Ghori
2. Kayadra
3. Somanath
4. Srihind

II. Answer in brief:

1. He is known as an ambitious ruler because he wanted to have crossed the Indus River and plundered parts of modern-day Afghanistan, Pakistan and India nearly seventeen times.

2.

	First battle of tarain	Second battle of tarain
Year	1191	1192
Who defeated whom?	Prithviraj chauhan defeated muhammad ghori	Muhammad ghori defeated prithviraj chauhan.
Result	Ghori withdrew.	First muslim kingdom was established.

3.

Muhammad Ghazni	Muhammad Ghori
1. He was the first independent ruler of Ghaznavid dynasty.	1. He established Muslim kingdom in India.
2. He came to India through Punjab.	2. He came to India through Gujarat.
3. He lost the battle seventeen times.	3. He made several conquest in India.

4. The Khokhar are people from Rajput community in Punjab. In 1205, Muhammad Ghori undertook many campaigns against the Khokhar in Punjab. Khokhar killed Ghori in 1205, at Lahore.

III. Answer in detail.

Conquests of Gujarat, Bundelkhand, Bengal and Bihar (1195-1202 A.D.) by Qutubuddin Aibak:

Qutubuddin Aibak attacked **Bhimdev**, the king of Gujarat. Though he was defeated, in the next battle he defeated Bhimdev and conquered Gujarat. His next target was Bundelkhand, ruled by the Chandel Rajputs. He defeated them too and conquered **Bundelkhand**. During this time, Muhammad Khilji, a slave of Mohammed Ghori attacked Bihar in 1197 and Bengal in 1202. Both Bengal and Bihar came under the control of Ghori, and **Khilji** became the viceroy of Bengal and Bihar.

Chapter – 4 EMERGENCE OF NEW KINGDOMS – SOUTH INDIA

I. Choose the correct answer

1. Malay Archipelago and China
2. Rajendra Chola and Rajendra Chalukya
3. Nataraja
4. Temples and Mutts
5. Sundara Pandyan
6. Vikrama Pandya

II. Answer in brief:

1. Kallanai dam is the fourth oldest water-diversion/ water-regulator structures in the world and the oldest in India which is still

in use. This dam became a model to later engineers.

2. The primary source of information on the rule of the Pandyas is from accounts by foreign travellers and traders. The land of the Pandyas was described as Pandyas by Megasthenes, as Pandi Mandala in the Periplus of the Erythraean Sea and as Pandyan Mediterranea and Modura Regia Pandionis by Ptolemy. The accounts of Marco Polo also mention later Pandya rulers
3. Tamilakam or Ancient Tamil country refers to the geographical region inhabited by the ancient Tamil people. Tamilakam covered today's Tamil Nadu, Kerala, Puducherry, Lakshadweep and southern parts of Andhra Pradesh and Karnataka.
- 4.

Current Social life	Pandyas social life
1. The society was divided into caste categories like SC, BC, etc.	1. The society under the Pandyas was based on the traditional fourfold division namely the Brahmins, Kshatriyas, Vaisyas and Sudra.
2. The caste system is not rigid.	2. The caste system was not rigid.
3. Women are generally treated on a par with men in possessing property and providing education.	3. Women were generally treated on a par with men.

5. Pearl fishing was flourished during the Sangam age. The Pandyan port city of Korkai was the center of pearl trade. Written records from Greek and Egyptian voyagers give details about the pearl fisheries off the Pandyan coast.
6. During the Second Pandyan empire, internal trade was active. Many trade guilds emerged in the Pandya region.
 - The wide use of coins, weights and measurements by the merchants showed flourishing trade.
 - To promote trade sometimes the kings were liberal and exempted some traders from paying taxes.

- The Tamilians were great traders. This is because of the increase in the agricultural production and availability of natural resources and minerals in the Pandya region.

III. Answer in detail:

1. Cholas has great patron towards Tamil literature and in building temples. Their rule has resulted in some great works of Tamil literature and architecture.

The world famous UNESCO Site, Brahadeshwara Temple at Tanjur is a well-known Chola architecture built by Rajaraja Chola I.

Airavateswara temple: Situated in Darasuram near Thanjavur, the Airavateswara temple was built during the reign of **Rajaraja Chola II**.

Kampaheswarar temple: Another example of the fine architecture from this period is the **Kampaheswarar temple** at **Tribhuvanam**, near Kumbakonam **Sculptures and Bronzes**.

The Chola period is also remarkable for its sculptures and bronzes. Most sculptures depict the god Shiva in various forms accompanied by his consort Parvati and the other gods, demigods and goddesses belonging to the Shaivaite belief, and other Shaiva saints.

2. **The Pandyan Dynasty:** extended from parts of modern-day Madurai, Thirunelveli, Trichy, and parts of Travancore. They initially ruled their country Pandya Nadu from Korkai, a seaport on the southernmost tip of the Indian Peninsula, and in later times moved to Madurai.

The First Pandya Empire: The dynasty revived under Kadungon in the early 6th century. After the defeat of the Kalabhras, the Pandya kingdom grew steadily in power and territory.

The Second Pandya Empire: From 13th century onwards, the Pandyas wanted to restore their kingdom. So again they fought with the Cholas and Pallavas and established their kingdom in Madurai.

Vikrama Pandya captured Madurai with the support of Kulotthunga III.

He was succeeded by his son **Jatavarman Kulasekara I**.

The Later Pandyas (1216–1345) entered their golden age under **Maravarman Sundara Pandyan and Jatavarman Sundara Pandyan (C.E. 1251)**, who expanded the empire into Telugu country, conquered Kalinga and Sri Lanka.

Decline of the Pandyan Empire: During their history, the Pandyas were repeatedly in conflict with the Pallavas, Cholas, Hoysalas and finally the Muslim invaders from the Delhi Sultanate.

Chapter – 5 DELHI SULTANATE

I. Choose the correct answer:

1. Qutb ud-din Aibak
2. Qutubuddin Aibak
3. Iltumish
4. NAVroz
5. Ibrahim Lodi

II. Prepare a timeline of the Dynasties of Delhi Sultanate:

The Mamluk dynasty/ Slave dynasty (1206–90)

The Khilji dynasty (1290–1320)

The Tughluq dynasty (1320–1414)

The Sayyid dynasty (1414–51)

The Lodi dynasty (1451–1526)

III. Give the relationship of:

1. Father
2. Youngest son
3. Son
4. Father
5. Father

IV. Answer in brief:

1. Mohammed Ghori, after winning the second battle of Tarain against Prithviraj Chauhan, immediately started his plunder in India.

Soon after, he returned to his kingdom and left his trusted lieutenant and former slave Qutubuddin Aibak to rule on his behalf. This marked the beginning of centuries of Islamic rule that was to follow in India.

2. Few examples of Muhammad bin Tughluq hasty decisions:

When he ordered minting of coins from base metals with face value of silver coins. This created a lot of confusion and failed miserably because ordinary people minted counterfeit coins from base metal they had in their houses and used them to pay taxes and

Another example was:

Shifting of Capital Tughluqabad to Daulatabad:

Mohammed bin Tughluq ordered the transfer of his capital from Delhi to Devagiri (i.e. Daulatabad) by forcing the mass migration of Delhi's population. Those who refused to do so were brutally killed and few died in the journey. The move to the new failed because Daulatabad did not have enough drinking water. After two years, the Sultan realized his mistake and the capital was shifted back to Delhi.

3. Firoz Shah Tughluq built towns such as Firozpur, Firozabad and Hissar.
4. Balban is referred to as the strongest ruler of the Slave Dynasty after Iltumish until Alauddin Khilji. He consolidated the power of the Slave Dynasty while also repelling constant attack by the Mongols. In spite of having only a few military achievements, Ghiyasuddin made civil and military reforms that earned him the position of being a strong ruler.
5. The greatest setback to the Tughluq dynasty came from the invasion of Timur, a Turkish chieftain from Central Asia, who attacked Northern India in the year 1398 C.E. He plundered the country. There was no opposition to his army when he ransacked the city of Delhi and they returned to Samarkhand with the wealth. The dynasty came to an end with the death of Mohammed Tughluq III in 1413 C.E.

6. Sikandar Lodhi encouraged trade and commerce and suppressed the powerful Afghan nobles. He organized an efficient spy system. He improved agriculture and industry. During his period, several Sanskrit books dealing with mathematics, medicine, astronomy and yoga were translated into Persian.
7. Ghiyasuddin Tughluq Shah, Abu Bakr Shah and Nasiruddin Mohammed Tughluq were the successors of Firoz.

V. Answer in detail:

1. Right after the fall of the Tughluq Dynasty, the Sayyid Dynasty arose. When Timur left India after his plunder, he appointed Khizr Khan as the Governor of Multan in 1413 C.E. Slowly, Khizr Khan used his power and influence to slowly bring other territories under his control. He was succeeded by his son Mubarak Shah (1421-1434 C.E.) Only in his reign, Hindu nobles were appointed in the court of Delhi. He was murdered in 1434 C.E., after which he was succeeded by his nephew Mohammed Shah who entered into a military alliance with Bahlol Lodi, the Governor of Lahore. Bahlol Lodi taken the throne from Mohammad Shah's son Alam Shah by occupying Delhi in 1457 C.E. The Sayyid Dynasty ended with the death of Alam Shah in 1467 C.E.
2. In Mamluk dynasty, the Women ruler Raziya Sultana took the power.
 - Raziya was the first woman ruler of Delhi.
 - She defeated and killed Firoz Shah, who ascended the throne after the death of Iltutmish. She was highly talented and won the praise of her father.
 - Raziya was favoured Jamaluddin Yaqut. The Turkish nobility became jealous because she was favouring Yaqut, who was not a Turk. Soon a rebellion broke out in which Yaqut was killed and Raziya was taken as prisoner.
 - Later, Raziya married Malik Altunia one of her nobles. Raziya's brother, Muzuddin Bahram Shah, killed Raziya and her new husband in 1240 C.E.

GEOGRAPHY

Lesson – 1 INTERIOR OF THE EARTH, VOLCANOES AND EARTHQUAKE

I. Choose the correct answer:

1. a. Lithosphere
2. c. plate boundaries
3. c. Silica and aluminium
4. d. Deccan Plateau
5. d. Richter scale
6. d. Pacific

II. Fill in the blanks

1. crater
2. Barren Island in the Nicobar Islands
3. The Mariana's trench
4. Magma
5. Tectonic movements

III. Find the odd one out

1. Vent
2. Magma
3. Lakshadweep Island

IV. Match the following:

- | | |
|-----------------------|---------------------------|
| 1. The Earth | - Rocky planet |
| 2. Mid Atlantic Range | - longest range under sea |
| 3. Rift valley | - Africa |
| 4. The core | - Baryosphere |
| 5. Tectonic movements | - Convection current |

V. Choose the appropriate answer:

1. b. A and R are correct and A explains R.
2. b. A and R are correct and A does not explain R

VI. Give single words for the following:

1. Crust
2. Mt. Popo Africa
3. Tsunami
4. Epicentre
5. Himalayan mountain in India

VII. Answer briefly:

1. An earthquake refers to trembling of the earth's surface due to a sudden release of energy from within the earth's interior. The sudden release of energy creates a vibration on the earth surface. It may last only for a few seconds.
2. A volcano is a vent in the earth's crust through which molten magma erupts suddenly toward the earth's surface. Lava is the name given to the molten rock material magma spewed on the earth's surface.
3. Volcanoes can also be grouped according to their periodicity of eruptions as active, dormant and extinct.
4. The boundary between the mantle and core is called as Weichert-Gutenberg discontinuity.
5. Earthquakes cause buildings collapse, vibrations often set landslides in mountainous region.

VIII. Give Reason:

1. The outer core of the earth is made up of Nickel (Ni) and Iron (Fe). Hence the core is also called as Nife layer. This layer extends from 2,900 to 5150 km.
- 2 The heat in the interior of the earth keeps the surface in motion. The movement of the Earth's lithospheric plates is termed as tectonic movements. Tectonic movements are likely caused by convection currents in the molten rock in Earth's mantle below the crust.

IX. Distinguish between:

1.

Sial	SIMA
The continental crust is made up of minerals silica and aluminium. So it is referred as Sial.	The oceanic crust is composed of dense rocks such as basalt mainly of silica and magnesium. It is therefore called Sima.

2.

Active Volcano	Dormant Volcano
Active: volcanoes are volcanoes that erupt frequently, if the eruption occurred currently or have erupted in recent times. These are 600 active volcanoes in the world. Eg. Mt. Stromboli - Mediterrean Sea	Some volcanoes may erupt in the future. At present they are quiet or 'sleeping'. They are called dormant volcanoes. Eg. Mount Fuji in Japan

3.

Exogenic Forces	Endogenic Forces
The forces that work on the surface of the earth are called as exogenic forces.	The forces which act from the interior of the earth is called as endogenic forces.

X. Answer in detail:

1. Classification of Volcanoes:

Volcanoes can also be grouped according to their periodicity of eruptions as active, dormant and extinct.

Active volcanoes are volcanoes that erupt frequently, if the eruption occurred currently or have erupted in recent times. These are about 600 active volcanoes in the world.

Eg. Mount Stromboli - Mediterranean Sea, Mount Etna in Italy are examples of active volcanoes. Hawaiian Islands. India's only active volcano is in Barren Island in the Nicobar Islands. Mauna loa in Hawaii is the world's biggest active volcano.

Dormant Volcanoes:

Some volcanoes may erupt in the future. At present they are quiet or 'sleeping'. They are called dormant volcanoes.

Eg. Mount Fuji in Japan, Mt Vesuvius (Italy), Mt. Krakatoa-Indonesia.

Extinct Volcanoes:

1. Some volcanoes erupted in the past but have not erupted within human history. They are called 'dead' or extinct volcanoes. They no longer have a supply of lava under them.

Eg. Mount Kilimanjaro in Tanzania, Mt. Kenya, Mt. Popo Africa.

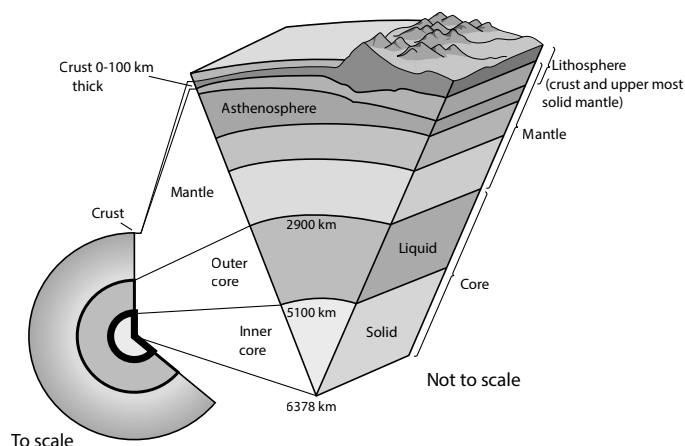
2. Volcanoes and Earthquakes are distributed along the plate boundaries. They are the most active zones of the world. The volcanic belts are also the principal earthquake belts of the world.

There are three major zones of volcanic activities in the world.

They are the circum pacific belt, the mid continental belt and the Atlantic belt. The circum pacific belt occurs as a ring around the Pacific Ocean which is itself roughly circular in shape. Therefore, it is called the "Pacific Ring of Fire" or simply "Ring of Fire".

Volcanoes and earthquakes are ways by which the earth adjusts itself to changes. Volcanoes bring out the magma as lava. In some plate boundaries, the rocks are slipping into the earth where one plate goes under another when they meet. Thus the earth cycle goes on.

3. The earth is divided into different layers. They are the **crust, mantle and core**.



The Crust is like the skin of the apple or even our own skin. It is very thin and made up of hardened rocks. It is the outermost layer of the earth. The surface is not uniform. The Crust along with the layer just beneath it is called the **lithosphere**.

Earth's crust is divided into two - continental crust and oceanic crust.

The continental crust is made up of minerals silica and aluminium. So it is referred as **Sial**.

The oceanic crust is composed of dense rocks such as basalt mainly of silica and magnesium. It is therefore called Sima. The Sial and **Sima** together forms the Earth crust.

The layer beneath the crust is the '**mantle**'. It is so hot in this layer that all minerals exist only in a semi liquid state called **magma**.

The core is the innermost layer of the earth. It is also known as the **barysphere**. The core is divided into outer core and inner core. The outer core is made up of Nickel (Ni) and Iron (Fe). Hence the core is also called as Nife layer.

Chapter – 2 LANDFORMS - WORK OF RIVER, DESERTS, COASTS AND ICE IN COLD AREAS

I. Choose the correct answer:

1. Plunge pool
2. Inselbergs
3. Lagoon
4. 'U' shaped valley
5. Source

II. Fill in the blanks:

1. Distributaries
2. Barchans
3. Glacier
4. Cirques
5. Moraines

III. Match the following:

1. Water falls – Courtalam
2. Loess – Gobi desert
3. Tributary of River Ganga – Yamuna
4. River kosi – Sorrow of Bihar
5. Lagoon – Pulicat lake

IV. Answer in one word:

1. rapids
2. Mouth

V. Give single words for the following: (this belongs to previous lesson)

1. Crust
2. Mt. Popa Africa

VI. Choose the appropriate answer:

1. b. A is correct but R is wrong
2. a. Both A and R are correct

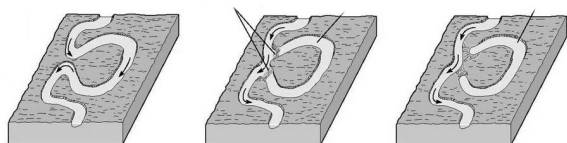
VII. Answer briefly:

1. Weathering:

It involves the breakdown of rocks into smaller and smaller particles until they become fine soil.

2. Ox-bow Lake:

Due to continuous erosion and deposition along the sides of the meander, the ends of the meander loop comes closer and closer. In due course of time, the meander loop cuts off from the river and forms a lake called as Ox-bow Lake. The name ox-bow is because the bend of the river resembles the hoof of an Ox.



3. Meander:

It means Zig-zag path. When the alluvial silt blocks the path of the river, the river bends around it and takes curved path known as Meander.

4. Tributaries are found in the journey of the long rivers to the sea. The small rivers join them in the mid-way known as tributaries. Eg. River Kaveri's tributaries are Bhavani and Hemavathi.
5. Waves, tides and Currents are three movements of Ocean water.
6. Features of
 - Waves – Sea cliff, Sea arches
 - Wind – Sand dunes, Barchans
 - Glacial erosion – ribbon lakes, Moraines

VIII. Distinguish between:

1.

Continental Glacier	Valley Glacier
Glaciers in large plains. Eg. Glaciers in Russia and Cannada	Glaciers in mountains. Eg. Himalayas, Alps

2.

Delta	Estuary
The triangular feature of distributaries formed before joining the sea.	A River joining the sea as a single mouth without forming a delta.
It joins the sea as many mouths.	They are usually deep and form good harbours and are important for fishing.
They are very fertile.	
Eg. Ganga-Brahmaputra delta	

3.

V-shaped Valley	U-shaped Valley
The valley formed when a river erodes through the mountains cutting vertically like a knife cuts through a cake.	Glaciated valley which has flat bottom and steep sides.

4.

Weathering	Gradation
Weathering involves the breakdown of rocks into smaller and smaller particles until they become fine soil.	Gradation is the process of wearing of rocks, transporting them and depositing them elsewhere by moving agents.

IX. Give Reasons:

1. The river deposits the load that it carries silt and other materials as sediments, called alluvium. This alluvial soil becomes the plains fertile.
2. Glaciated Valleys have flat bottoms and steep sides when they erode. Thus it has Ushape. Whereas River valleys erode through mountains cutting vertically forming V shape.

X. Answer in detail:

1. The rivers in its course do its gradational work under three types of work: erosion, transportation and deposition.

The landforms formed by the rivers in its course are:

Waterfall, Valley, Plains course

Waterfall:

Falling of river water over a vertical step in the river bed is called Waterfall. Smaller waterfall are called rapids.

Valley:

Rivers erode through the mountains cutting vertically like a knife cuts through a cake. The result is a V-Shaped valley and a steep gorge.

Plains course:

In the mature stage or in the plains course of a river, the wide plains and the slowing down of the river speed makes the river bend and curve. It lays down some of the load that it carries silt and other material as sediments, called alluvium. The alluvial silt is laid down blocking the path of the river. So the river bends around it and takes a curved path known as a meander.

2. **Landforms formed by wind deposition:**

Sand dunes, Barchans, Loess

Sand dune:

A sand dune is a heap of sand that may be a mound of a metre or so to hills of sand that may be 200 metres high. The sand that gets carried finds the rock as obstruction, falls and then gets deposited in low hill like structures. These are called sand dunes.

Barchans:

The crescent shaped sand dunes are called Barchans.

Loess:

Very fine particles of sand can get blown long distances from their place of origin. When such sand is deposited in large areas, it is called loess. Large deposits of loess from Gobi deserts are found in China.

3. **Aretes:**

When a glacier moves down snowy peaks of mountains, it forms sharp edges on mountain tops by plucking and freezing.

Cirques

An arm chair - shaped depression with a steep side wall and head wall.

When many arêtes and cirques form successively around a mountain, they leave behind a sharp-edged peak that looks like a pyramid. Such peaks are called pyramidal peaks.

Glaciated valleys unlike river valleys are U shaped. They have flat bottoms and steep sides. When the glacier melts, the eroded depressions are left with the melt water and form long lakes that show the path of the glacier. They are called ribbon lakes. The sharp deposits such as rocks, sand, silt that the glacier carries are called moraines. Agents of gradation sculpt and carve out land features and add beauty to them. Each feature has a form and a way of forming.

Chapter-3 POPULATION AND SETTLEMENT

I. Choose the correct answer

1. b. Rural
2. b. Star-like settlement

II. Fill in the blanks

1. Villages
2. Nucleated Settlement
3. Urban

III. Match the following:

1. Caucasoid – European
2. Negroid - African
3. Mongoloid - Asiatic
4. Australoid - Australian
5. Apartheid – South Africa

IV. Answer in one word

1. demography
2. anthropology
3. Migration
4. Scriptures

V. Answer the following:

1. Major Human Races of the world are. Caucasoid, Negroid, Mongloid, Australoid.
2. Hinduism, Islam, Christianity, Buddhism, Jainism and Sikhism are the major religions of India. Other major religions of the world are Judaism, Shintoism, Confucianism, Taoism.
3. The city is an urban region which is very much advanced in terms of infrastructure, real estate, communication and market facility are called Smart city. Eg.
4. Urban Settlements are classified into Large towns, Cities, Metropolises, Megapolises, Smart Cities, Satellite town
5. After Independence the different territories of India are reorganised as States and Union Territories based on languages to highlight the diversity and culture of different regions.

VI. Give reason:

1. In, Urban Settlements agriculture is almost absent. Hence most people are engaged in shops and other business. Services like transport, piped water supply and sewage disposal, schools, medical facilities are readily available.

Due to all this, In the urban settlement people are mostly engaged in secondary and tertiary activities.

VII. Distinguish between:

1.

Rural Settlement	Urban Settlement
Villages are called Rural settlements.	Towns and cities are called Urban Settlements.
Agriculture is the main occupation.	Agriculture is almost absent.

People involve themselves in primary activities.	People involve themselves in secondary and tertiary activities.
Services and Facilities are poor.	Services and facilities are good.

2.

Negroid	Caucasoid
Negroid have dark eyes, black skin, black wooly hair, wide nose, long head and thick lips.	They are with fair skin, dark brown eyes, wavy hair and narrow nose.
They are living in Africa.	They are in Europe.

3.

Compact Settlement	Dispersed Settlement
Compact settlement is also known as nucleated settlement.	Dispersed settlements are found in areas of extreme climate, hilly areas, forests etc.,
In this type large number of houses are built very close to each other.	The houses here are far apart with space. Eg: In Thar Desert, Rajasthan
Such settlements are found along the river valleys and in plains.	

4.

Metropolis	Megapolis
Towns with over 1 million.	Very large metropolises.
Eg. Chennai, Bangalore	Eg. Boston, Newyork in USA

VIII. Answer in a paragraph:

1. The most widely found human racial types are based on visual traits such as head shape, facial features, nose shape, eye shape, skin colour etc.,

The major Human Races of the World are:

1. Caucasoid (European)
2. Negroid (African)
3. Mongloid (Asiatic)
4. Australoid (Australian)

The Caucasoid is known as European race. They are with fair skin, dark brown eyes, wavy hair and narrow nose. They are found in Eurasia.

Negroid have dark eyes, black skin, black wooly hair, wide nose, long head and thick lips. They are living in Africa.

Mongoloids are known as the Asian-American race. They have light yellow to brown skin, straight hair, flat face, broad head and medium nose.

Australoids live in Australia and Asia. They have wide nose, curly hair, short in hair and dark skin.

2. Urban Settlements:

Towns and Cities are Urban Settlements.

These are the towns with over 10,000 population and cities with over 1,00,000 population. They have houses and buildings close to one another and are connected by a good network of roads.

Services:

Services like transport, piped water supply and sewage disposal, schools, medical facilities, recreation and entertainments are readily available. Most people are engaged in shops and other business establishments. Agriculture is almost absent. Hence, In the urban settlement people mostly are engaged in Secondary and Teritiary Activities.

Types:

Cities, Large towns, Metropolis, Megapolis, Smart city, Satellite town.

A Conurbation is a region comprising of that through population growth and physical expansion have merged to form on continuous urban area.

3. The rural settlements are broadly classified into linear settlement, rectangular settlement, circular settlement, star like pattern etc.,

- Some village may be along a river, road or railway line. They are called as linear settlements.
- Rectangular settlements are almost straight, meeting each other at right angles. This is found in plains.

- Houses built around a central area are known as circular pattern of settlements. These are found around lakes and tanks.
- In the places where several roads converge and houses spread out along the sides of roads in all directions we find star like pattern of settlements.

CIVICS

Chapter-1 EQUALITY

I. Fill in the blanks:

1. Humanity
2. England
3. Discrimination
4. Untouchability
5. 18

II. Match the following:

Civil Equality	Enjoyment of civil rights by all citizens.
Political Equality	Equal chance and opportunity to participate in political life.
Social Equality	Equal status in society.
Gender Equality	Men and women should be treated equally.
Economic Equality	Vast difference between income, wealth and property.

III. Answer the following in one or two lines:

1. Equality means that all human beings are equal. They have equal worth, equal social status and can enjoy the same rights and opportunities, regardless of their caste, religion, gender, race, place of birth etc., to develop their skills and talents and follow their goals and ambitions.
2. Universal Adult Franchise means that all citizens who have attained the age of 18 and above, have the Right to vote without any discrimination based on caste, religion, economic status, gender, etc.

3. The Constitution provides for joint electorates, where all the voters of a particular constituency must vote for the same candidate irrespective of his religion, caste, gender etc.
4. According to Article 21 A of the Indian Constitution, the state should provide free and compulsory education to children between the ages of 6 to 14 in such a way as the state, may by law determine. No person can be denied admission to any educational institution run by the state on the grounds of religion, gender, caste, etc.

IV. Answer the following questions:

1. In India, women are discouraged from taking up certain jobs and activities. The Government of India has stepped in with policies and programmes preventing discrimination and harassment of women in places of employment, and even encouraging them to take up higher education, opening up job opportunities for them in different fields, reserving seats for women and several other measures.
2. In a democracy equality is very important as it protects the dignity of its citizens. Very often the religion practiced, caste, economic status in life etc. are reasons why people are treated unequally. When people are treated with inequality, their dignity is violated. Dignity means self respect. It has often been defined as "the state or quality of being worthy of honour or respect. It also means the respect a citizen has to be given from others, simply because he is an important member of the community, and a fellow human being. Human dignity has prime importance as every other fundamental right is derived from this human right.
3. Articles in the Indian Constitution guaranteeing equality to all citizens are as follows:

Article	Provisions
Article 14	Guarantees equality before law and protection by law
Article 15	Prohibits discrimination

Article 16	Equal opportunity in matters of employment
Article 17	Abolishes untouchability and its practice in any form
Article 18	Abolishes titles

4. The Indian Constitution, guarantees equality to every citizen. Every individual is recognised as equal even though they may differ in caste, creed, religion, gender, economic status, educational background etc. This however does not mean that inequality does not exist or is not experienced by certain communities in our country. The daily lives of Indian citizens are far from equal, and inequalities are still visible in different ways, in our society today.

The fight against equality is a struggle that still continues. Every measure is being taken by the government through laws and policies to ensure that people are not ill-treated or discriminated against, and that every citizen is respected and treated with dignity.

Chapter-2 POLITICAL PARTIES

I. Fill in the blanks:

1. Stasiology
2. Formal membership
3. Party Manifesto
4. articulation, aggregation
5. symbols
6. Bal Thackeray
7. Mahatma Gandhi
8. National Democratic Alliance (NDA), United Progressive Alliance (UPA)
9. Indian National Congress

II. Match the following:

Campaigning	Electoral function
Communist Party of India	Suravaram Sudhakar Reddy
Nationalist Congress Party	Sharad Pawar
Bharatiya Janata Party	Amit Shah
Communist Party of India (Marxist)	Sitaram Yetchury
Bahujan Samaj Party	Mayawati
Shiv Sena	Uddhav Thackeray
Joint candidates	Pre-election agreement

III. Answer the following in one or two lines:

1. A party that is recognized by the Election Commission and secures at least six per cent of the total votes in the Lok Sabha election, in four or more states, is called a National Party. They participate in elections all over India.

A party that secures at least six per cent of the total votes in an election to the Legislative Assembly of a state and wins at least two seats is called a State or Regional Party. They participate in elections only within their own state. But they are recognized in the neighbouring states as well.

2. The following are the characteristics of political parties:
 - Political parties are organizations that have a formal membership.
 - They vary in size, organisation and policies.
 - The members of a political party share the same political ideologies.
 - They aim to form the government, and to exercise political power through constitutional means.
 - They work towards promoting national interests and national welfare.
3. Symbols are allotted by the Election Commission to recognised political parties and candidates for an election. These electoral symbols are easy to identify and are recognised and remembered by the voters. The Election Commission has some symbols that are reserved, and some that are free.

4. 'Articulation' means political parties educate, instruct and make the citizens aware of the party's motive.

'Aggregation' means to bring together people from various sections, on a common platform, and make them understand their future policies.

5. If a political party fails to win a majority and acquire power, but gets the majority seats, next to the ruling party, then it is called the 'Recognized Opposition party'. All the other losing parties are collectively called Opposition parties.

IV. Answer the following questions:

1. Political parties that fail to acquire power are described as Opposition parties. They play a key role in a democratic country, like India. They act like a check and balance to the ruling party by pointing out their lapses and errors. They are expected to provide constructive criticism to help the government rule the nation effectively. Question hours and debates are conducted to arrive at alternative solutions and strategies. They keep the public abreast with every step taken by the government. Because of their importance, prominent leaders of the main Opposition parties enjoy the same privileges as that of the ruling party leaders. The leader enjoys the rank of a cabinet minister.
2. India has a Multi-party system, formed by small Regional parties. This pattern is common in France too. Political parties that wish to contest local, state or national elections are required to be registered by the Election Commission of India. If they are registered in two or three states, then they are called Regional parties. If political parties are recognized in four or more states, then they are declared National parties by the Election Commission. State parties are those which are recognized in one state alone.
3. As with any other democracy, political parties represent different sections, regions or tribes, and their core values play a key role in the politics of a country.

In India, both the Executive branch and the Legislative branch of the government are run by representatives of the political parties who have been elected by the voters. Through voting, the people of India decide which representative and which political party should run the government. Through the elections, any party may gain a single majority in the Lower House. Coalitions are formed by political parties in case no single party gains a single majority in the Lower House. Unless a single party or a coalition party has a majority in the Lower House, a government cannot be formed by that party or the coalition.

4. Independent candidates are candidates who participate in elections without the support of any party. Very rarely do the larger parties support independent candidates. In Indian politics, there are also many independent candidates who stand for elections.

Many of the large National parties have a pre-election agreement with other smaller parties to field joint candidates in some constituencies. This is done to avoid the splitting of votes by many minor parties, thereby causing the big rival party to win.

5. Generally, there are three types of political party systems in the world. They are as follows:

Single-party System	Bi-party System	Multi-party System
In this system, only one party exists. There is no Opposition party. It has complete control over the state	In this system, there are two parties- the ruling and the Opposition.	In this system, there are more than two political parties with different policies and objectives.
Example: China	Example: The USA (The Republican Party and the Democratic Party)	Example: France and India

ECONOMICS

Chapter-1 PRODUCTION

I. Choose the correct option:

1. c. Capital
2. c. Tertiary sector
3. b. Needs
4. b. Richard Branson
5. a. Derived

II. Answer the following:

1. Factors of production describes the inputs used in the production of goods (or) services in order to make a profit. Factors of production can be categorized as:

- Primary Factors - labour and land
- Derived Factors - Capital and Organization

2. Advantages:

- Workers are trained in one task and specialise in that area. This increases efficiency and output.
- Less time is wasted moving from one work bench to another.

Disadvantages:-

- Workers can become bored doing just one job – efficiency might reduce.
- If one person is absent and no one else can do the job, production might be stopped.

3. When the production process is split up into different tasks and each worker performs their assigned tasks. It is known as specialisation.

4. Production can be classified into three:-

- Primary
- Secondary
- Tertiary (or) Service production

a) Primary Production: - The primary sector of the economy extracts (or) harvests products from the earth. It includes the production of raw materials and basic foods.

b) Secondary Production: - The secondary sector of the economy manufactures finished goods.

c) Tertiary (or) Service Production: - The Tertiary sector is that part of the economy where businesses produce services.

5. Things cannot be produced unless someone makes them. Therefore labour is important.

Labour represents the people that are available to transform resources are available to transform resources into goods (or) services that can be purchased.

6. Act of creating output- goods (or) services that satisfy the consumer's wants and needs is called utility.

Types of Utilities:

- **Form Utility:** - It is the value a consumer sees in a finished product. Eg. Sugarcane is changed to sugar, and then we consume it.
- **Place Utility:** - The process of shifting a product from one place to another, so that its utility increases is known as place utility.
- For example, the apples grown in abundance in the Himalayan valleys are transported to

the southern parts of the country where there is a lot of demand for it.

- **Time Utility:** - When a commodity is stored for use in the future, we will call it time utility. Eg. Woollen clothes are stored for Winter.

7. More business would result in jobs, more generation of wealth for the nation. This would also result in the decline of poverty. Hence we need businesses.

IV. Case Study:

1. a) The two factors of production that Geeta has used was labour, land which are essentially required for production.

b) Yes, it will help Geeta is recruiting two other people in her business.

Reason: Geeta splits up the production work into physical labour and mental labour. So, she has work specialisation and it leads to efficiency and output.

c) Yes, because she is a hard worker, creative maker, self-confidence and innovative person.

Brand name	Primary factors	Secondary factors	Tertiary factors
Britannia biscuits "good day"	Physical labour and mental labour are used. Physical labour: It includes the manual power. How the man power was used and how it is shifted from one place to another place. Mental labour: It includes the organisation or a control over an organisation which is important.	• Machinery • Manufacturing • Any Artificial Ingredients used. • Usage of Ingredients Machinery: Machinery like a lif ovens in India offers a variety of Biscuit making machines • Ingredients: Wheat flour, sugar, edible vegetable oil, nuts etc. and artificial flavours and synthetic food colour.	• Transport • Advertising • Warehousing Warehousing: • It may be used for storing up of Natural Ingredients • And also the finished products are stored in a place called godown (or) warehouse.

Brand name	Primary factors	Secondary factors	Tertiary factors
Britannia biscuits	Raw materials used:		Transports:
	• Wheat flour • Sugar, Vegetable oil • Butter and skimmed milk powder cashews etc.		Material Handling is the movement, storage, protection and control of materials through the process.
	"Place or land"		Advertising:
	The Britannia biscuits manufacturing company had its headquarters in 'Kolkata' (Where the business started)		• Through Televisions, Radios, Facebook and Other Social Medias. • By preparing hoardings on the centre of the areas that are catchy to the public.
	Capital:		
	It was started up with the capital of ₹ 5 Crores.		



1. MOWGLI'S BROTHERS

Page No. 1

Warm up

Group Discussion

1. In the first picture, the lion is in a cage and in the second picture, the lioness is in the wild. The lion in captivity is caged, while the lioness is free to roam around in its natural habitat.
2. No, wild animals should not be kept in captivity because animals should be free to roam around and live in the wild. Their home is the jungle and they should be in their natural habitat and not in a cage as a captive. A cage restricts their freedom of movement which makes them dependent on others for their survival. In their natural habitat, they learn to fend for themselves which keeps their natural instincts intact.
3. I am familiar with The Jungle Book by Rudyard Kipling, The Lion King, Jurassic Park, Ice Age and the Life of Pi, among others.

Page No. 7

Reading

A. Write a suitable character trait for the characters in the lesson.

1. Tabaqui - mischief-maker
2. Shere Khan – loud talk
3. Deer - foolish
4. Young wolves - flatterers
5. Mowgli - fearless
6. Bagheera - tender and caring

B. Who said the following to whom? In what context were they said?

1. These words were spoken by Mowgli to himself. When he peeped through the window into

the hut of the villagers, he saw a man's child pick up a pot and fill it with lumps of red-hot charcoal. Mowgli thought that if a cub (human child) could handle the fire on his own, then there is nothing to fear.

2. (Line missing-Use this) I had never seen the jungle.

Bagheera, the panther speaks this line while talking about his life before the jungle. He tells Mowgli that he used to be a caged animal in the palace at Oodeypore (Udaipur). He realized that he belonged to the jungle; so he broke the lock and escaped to the jungle, his home. He is trying to persuade Mowgli to go back to his kind, that is, go back to living with humans.

3. The Mother Wolf said these words to Mowgli when he came running back to the cave. She knew something was troubling him from the sound of his breathing.

4. These words were spoken by Shere Khan at the Council Rock where the wolf pack and other animals had gathered. Akela, the leader of the pack missed his kill when the sambar attacked him, which meant that the leadership of the pack was open. Shere Khan wanted to lead the pack and rule over the wolves and therefore, said these words. Mowgli stopped him by saying that the leadership of the pack remains with the pack alone.

5. These words were spoken by the young wolves to Akela. The name 'Lone Wolf' refers to Akela who is also the leader of the wolf pack. The young wolves asked their leader to show his strength when the sambar attacked the pack and tried to kill Akela.

C. Answer the following questions.

1. Mowgli thought that Shere Khan was all long tail and loud talk. In other words, he thought that Shere Khan was not as strong or brave as he showed himself to be.

2. One day, Bagheera realised that he was the panther and not any man's plaything. He broke the lock of the cage with a blow of his paw and escaped the cages of the King's Palace.
3. The scrap-fed wolves (young wolves) were flattering Shere Khan.
4. By Red Flower, Bagheera meant fire. No animal in the jungle called fire by its proper name as they were terrified of it. So, they used different ways to describe it.
5. The young wolves thought that a man-cub (Mowgli) had no place with the pack. They believed this because Shere Khan taught them to think this way.

D. What do you think? Discuss in groups.

1. Akela missed his kill when the sambar attacked him. Since he failed to kill his attacker, it meant that he was not in his prime or fit to lead the pack. This led to the leadership of the pack be open.
2. Mowgli said that the leadership of the pack was with the pack alone because he felt that a tiger could never lead a wolf pack. Only a wolf can lead its pack.
3. Mowgli considered the wolves his brothers because he was born in the jungle and raised by the wolf pack. He even pulled out thorns from the paws of the wolves as they were very dear to him. Since he considered himself a part of the pack, he called the wolves his brothers.

Page No. 8 to 10

Vocabulary

A. What did the author mean by the following? Circle the correct options.

1. c. thrust
2. c. lie comfortably
3. b. leapt
4. c. lustrous
5. c. fall all over

B. Refer the dictionary and write two other words that mean the following.

1. deadly – fatal, lethal

2. pleasant – enjoyable, delightful
3. tenderly – gently, delicately
4. wicked – evil, vicious
5. gathered – assemble, accumulate

C. Write a suitable animal sound.

- | | |
|----------------|-----------|
| 1. roar | 4. cackle |
| 2. snort, oink | 5. squeak |
| 3. bark, howl | |

D. Write a suitable animal sound made by a human being.

- | | |
|-----------|----------|
| 1. yelped | 4. cooed |
| 2. whines | 5. snort |
| 3. roar | |

E. Add prefixes to form the opposites of the following words.

1. new - renew
2. passionate - dispassionate
3. comfort - discomfort
4. precious – semiprecious
5. replaceable - irreplaceable

F. Match the prefix with its meaning.

1. multi - many
2. dis – apart or away
3. un - not or without
4. ir - not
5. mis - wrong or mistaken
6. bi – twice or two
7. semi - half
8. pre – before
9. im – not

Page No. 10

Language in daily use

Write suitable suggestions for the following.

1. We could look for it together.
2. Let's try a new theme this year.

3. How about the new cafe in the next street?
4. Don't worry. We could go out tomorrow.
5. Why not take the shorter route to reach faster?

Page No. 11 and 12

Grammar

A. Write the type for each sentence.

1. Declarative sentence
2. Interrogative sentence
3. Exclamatory sentence
4. Imperative sentence
5. Interrogative sentence

B. Change the affirmative sentences into negative sentences.

1. They do not play badminton.
2. Geeta does not speak French fluently.
3. My mother does not go for community service every day.
4. It is not going to rain today.
5. I am not looking for my slippers.

C. Write whether the sentence is affirmative or negative.

1. Negative sentence.
I am always on time. (Affirmative sentence)
2. Negative sentence.
You are impolite/rude. (Affirmative sentence)
3. Negative sentence.
Rita was denied permission. (Affirmative sentence)
4. Affirmative sentence.
A fox is not as strong as a lion. (Negative sentence)
5. Affirmative sentence.
The other players in the team are not as tall as Mohan. (Negative sentence)
6. Negative sentence.
Meena lacks hobbies. (Affirmative sentence)

Page No. 13 and 14

Revision

D. Underline the common nouns and circle the proper nouns.

1. capital (common), Tamil Nadu (proper)
2. river (common), Kolkata (proper)
3. month/year (common), January (proper)
4. animal (common), Arctic (proper)
5. mountain (common), Mt. Everest (proper)

Proper nouns

1. capital – Chennai
2. river – Hugli river
3. month/ year – January/ 2020
4. animal – polar bears
5. mountain – Mount Everest

E. Fill in the blanks with a suitable collective noun. The hints are in the box.

- | | |
|----------|----------|
| 1. panel | 4. band |
| 2. pack | 5. swarm |
| 3. bunch | |

F. Complete the sentence with a suitable abstract noun.

1. kindness, generosity
2. bravery
3. laughter
4. humility
5. respect

Page No. 14

Listening

Name of the following animals:

1. The three dogs - Bluebell, Jessie, and Pincher
2. The two horses - Boxer and Clover
3. The goat - Muriel
4. The donkey - Benjamin

Answer the questions.

1. The animals appeared in the following order: dogs, pigs, hens, pigeons, sheep, cows, horses, goat, donkey.
2. The animals began to make themselves comfortable after their different fashions.
3. The sheep and the cows lay down behind the pigs and began to chew the cud.
4. The horses were considerate towards the smaller animals as they were careful to check for smaller animals hidden in the straw before sitting down. They were caring by nature. Clover is described as being motherly while Boxer was respected for his character. They knew their strength and used it to care for smaller animals.
5. Boxer was respected for his steadiness of character and tremendous powers of work.
6. Benjamin was the oldest animal on the farm, and the worst tempered.

Page No. 14 and 15

Speaking

A. Write whether the words are pronounced with a hard or soft g.

1. digs – hard g
2. margin - soft g
3. zigzag – hard g
4. gym – soft g
5. detergent – soft g

B. Discuss the different animal behaviours in the story that humans also do.

- Shere Khan is all long tail and loud talk - Like the tiger, many humans also show themselves to be brave and strong but are not so in reality.
- Shere Khan, flattered with his following of scrap-fed wolves, walked to and fro openly – Just like the wolves, humans also flatter each other when they need something.
- The cubs were out, but Mother Wolf, at the back of the cave, knew by his breathing that something was troubling her frog. - Just like the Mother Wolf, human mothers also know when their children are troubled or upset; they

share the same bond of love and care with their offspring.

- Others hate you because their eyes cannot meet yours. – Humans cannot meet the eyes of others when they are guilty or feel that someone is more powerful than them.
- Like the animals, humans also fight for their territories.

Page No. 15

Class Discussion

- Yes, it is very important in today's world to nurture a feeling of brotherhood because people around the world are fighting and killing each other over difference in opinion, religion and caste. When the world is struggling to stay united, only this sense of brotherhood will keep us all together as one. United, we will always stand and divided, we will always fall.
- The biggest challenge that we face in today's world is that people are divided by geography, religion, caste, creed, language and many other factors. We have to remember that at the end of the day, we are all one – humans, brothers and sisters.
- Yes, we can indeed dream of a world where we are all brothers. And that begins with each person making an effort. We have to teach ourselves and the people around us that we have to set aside our differences and together accept each other for who they are and love them even with all these differences. It is only when we see ourselves as brothers and sisters, will peace and harmony exist in this world.

Page No. 15

Writing

Imagine you are Mowgli and write an autobiography.

I am Mowgli, the man-cub and this is my story. I live in the jungle, but I don't remember how I got here. I remember growing up with the wolves. When I was a small baby, the Lone Wolf, Akela and Mother Wolf adopted me and raised me with their pack. I grew up with many other young wolves and they are all my brothers. I helped them when they got into a fight and even pulled out thorns from their paws when

they were injured. I love them as my own as call them my brothers.

I soon became a part of the wolf pack and learnt to hunt, and fight like them. Bagheera, the panther is my most favourite person. He loves me and has helped me stay away from Shere Khan, the greedy tiger who wants to be king and rule over all of us. Bagheera told me that if I could go to the village and get the Red Flower, I would be able to defeat Shere Khan. The Red Flower means fire. The animals are so scared of it, so they used different ways to describe it.

I left for the village and grabbed a small pot of fire from a young boy. I came back to the jungle to find Akela defeated. He had missed killing the buck and now the leadership of the pack was open. Shere Khan jumped at the opportunity to be king but I could not let that happen, certainly not on my watch.

We soon gathered at the Council Rock to decide the fate of the pack. I stood up boldly and showed them the Red Flower. I told Shere Khan that the leadership of the pack will remain with the pack alone. The wolves raised me as their own and there was no way I would let a tiger lead them. I am happy Akela is our leader. I can go back to live with the wolves and stay happy forever with my pack.

2. RAINFOREST SONG

Page No. 16

Warm up

Group Discussion

1. Amrita Devi was a courageous woman because she faced the king's men bravely when they came to cut down the khejri trees. She told them that they would have to cut her neck first to cut the trees. She faced the men fearlessly because she wanted to save the trees from being cut.
2. We should protect trees because when we cut down our trees, it harms the environment. To protect our environment from further destruction and global warming, we have to plant more trees and save the existing ones. The trees also have several benefits. Among them, the most important one is that they provide oxygen for us.

Page No. 18 and 19

Reading

A. Write the different ways in which the poet addresses the forest.

Forest,

1. my mother
2. my father
3. my shelter
4. the home of animal, bird and man
5. the ground

B. What does the poet mean by the following? Tick the correct option.

1. a. The sounds in the forest are like whispers.
2. b. The forest is like a mystery, which is difficult to understand or explain.
3. a. The poet cannot survive without the forest.

C. Read the extracts and answer the questions.

1. a. Forests help us by providing shelter to those in need – animals, birds and man. The trees provide shade under which humans and animals can rest.
b. The poet requests the rainforest to provide shade to him as he walks on the open space in the forest (green forest glade).
2. a. The forest is like a mystery, dark and deep which is difficult to understand or explain. We have not yet discovered the immense power of the forest. No man can venture into all the forests and deep into it.
b. We know that the poet is thinking about the forest all the time because he uses words like 'waking' and 'sleep'. In these lines, he indicates that the forest is like a snake which glides through his waking and sleep.
3. a. Yes, the forest is home to the poet as he describes it as a place where he lives (breathe my being) and rests (pillow my head).
b. The word 'tread' means to put your foot on something. In these lines, the phrase 'to tread' means 'to walk'; the poet explains that the forest is the ground where he walks.

D. Answer the following questions.

1. The rhyming words in the poem are:
 - fruit- roots
 - shade – glade
 - ways – maze
 - deep – sleep
 - man – understand
 - tread – head
 - upon - gone
2. The poet places his tread in the forest. He describes the forest as the ground where he places his tread.
3. The forest provides a home for animal, bird and man.
4. The poet likes waking and sleeping in the forest. He thinks about the beautiful forests all through the day and night.
5. The poet wants to convey the central idea that forests are very important to humans, animals and birds alike. He expresses his love and respect for the forest and asks the readers to imagine a world without forest – which seems an impossible one. He explains that he cannot survive without a forest.

Page No. 19 and 20

Vocabulary

A. Compare the following in an interesting way.

1. The stars sparkled brightly like jewels.
2. The athlete ran as fast as a cheetah.
3. The rainbow is as colourful as a peacock.
4. The baby is as light as a feather.
5. Her cheeks are as pink as roses.

B. Complete the landforms' word scramble. Use the letters in the shaded boxes and complete the answer below.

- | | |
|-----------|-----------|
| 1. MEADOW | 5. DESERT |
| 2. HILLS | 6. DUNE |
| 3. VALLEY | 7. PLAINS |
| 4. GORGE | 8. CANYON |

C. Write five different ways in which one can move smoothly and quickly on a surface.

- | | | |
|----------|----------|------------|
| 1. glide | 3. float | 5. slither |
| 2. slide | 4. skid | 6. skate |

Page No. 20

Activity

A. Work in pairs and write a poem about animals in the forest. Use rhyming words.

I saw an elephant in the zoo,
And its baby too.
The elephant sang a song with his mama,
And mama danced along with her nana.
The other animals joined them too,
Together they said yabba dooba doo.
They danced all day, and night,
With all their might.
Then they just dropped to the floor,
And looked forward to more.

B. List down what you can do to protect trees. Exchange your ideas.

1. Plant more trees and encourage people around you to plant trees as well.
2. Take care of the existing trees.
3. Ensure that people around you know the importance of preserving trees.
4. Read more about trees and share the information with your friends and family.
5. Don't waste paper. Use it wisely as trees are cut down to make paper.
6. Use eco-friendly products instead of paper plates, paper cups, tissues and so on.
7. Use recycled materials whenever possible.

3. THE GREAT APES

Page No. 21

Warm up

Write Yes or No against each sentence.

- | | | |
|--------|--------|-------|
| 1. No | 3. Yes | 5. No |
| 2. Yes | 4. Yes | |

Reading

A. Write differences between apes and monkeys.

Apes	Monkeys
They are bigger and have fewer children than regular monkeys.	They are smaller and have more children than apes.
They can stand upright more than monkeys.	They cannot stand as upright as apes do.
They do not have tails.	They have tails.
Their brains are more developed and larger which makes them smarter and intelligent.	Their brains are not as large or developed as apes.
They have unique fingerprints and flat fingernails.	They do not have unique fingerprints and flat fingernails.
They have prehensile feet, which means they have a strong grip to grab things.	They do not have prehensile feet, which means their grip is not as strong as apes.

B. Complete the following.

1. troop
2. orangutan
3. Africa
4. natal groups
5. Australia

C. Answer the following questions.

1. A mature male gorilla develops gray hair on its back while a silverback has a distinctive patch of silver hair on its back, which comes with maturity. They also have large canine teeth which comes as they mature.
2. Orangutans are known as the gardeners of the forest because they play a vital role in seed dispersal and in maintaining the health of the forest ecosystem.
3. Chimpanzees exhibit emotions such as fear, distress, annoyance, anger, rage and enjoyment or contentment.
4. Gorilla troops tend to be made of one adult male or silverback, multiple adult females and their offspring. At times, multiple-male troops also exist. Both males and females tend to leave their natal groups.

5. The future of Asia's only great ape is in peril because their forest habitat in Indonesia and Malaysia are rapidly disappearing.

D. Class Discussion

1. We know that chimpanzees are aware of the public in zoos because they often find a favourite spot in the enclosure to view the public and a special place to get away especially when the crowds become bothersome.
2. A chimpanzee community consists of about 50 chimpanzees of which six to eight are adult males and usually twice as many are adult females. The other community members are infants, juveniles, and adolescents. The size of a community is dependent on the availability of seasonal resources such as food. Sometimes a chimpanzee community may break up into many smaller groups. The most common small group is a mother and her offspring foraging for food.

Vocabulary

A. Bring out the meaning of the words in the box in sentences of your own.

- My mother fed my **infant** brother and put him to sleep in his crib.
- The lioness is fiercely protective of its **offspring**; it guards it from predators.
- The police inspector let Tony go with a warning as he was 11 years old and a **juvenile**.
- My **sibling** and I love to play video games; we rarely fight.
- Unlike Ravi, Suman is quite **mature** for her age.
- The two **adolescent** boys got into trouble at their school.
- Mathew left his **natal** village to find a job in the big city.
- The teacher asked the **adults** to accompany their children to the stadium.

B. Write five movements, which you can use your hands for, example: grab.

1. shove
2. nab
3. catch
4. gesture
5. grip

C. Write antonyms for the following.

1. upright - crooked
2. slender - fat
3. unique - common
4. bothersome - pleasing
5. dispersal - collection
6. local - global

D. Combine suitable words in the box to form compound words.

- lukewarm
- honeycomb
- earthquake
- homemade
- widespread

Page No. 26

Language in daily use

Describe three things using suitable degrees of comparison.

- Suman bought a **big** pot for her garden.
- My book is **more interesting** than yours.
- The new mall is the **biggest** in the city.

Page No. 26

Listening

1. soft, brown
2. round, merry
3. scarcely, long
4. peeps, tall
5. nibbles

Page No. 26 and 27

Speaking

A. Say these words aloud.

Listen to the sound and write the number of syllables each word has.

Word	Number of syllables
1. canine	2 syllables
2. vocal	2 syllables
3. community	4 syllables
4. natural	3 syllables
5. forest	2 syllables
6. habitat	3 syllables
7. dependent	3 syllables
8. seasonal	3 syllables

B. Describe the antics of a monkey briefly.

A monkey:

- makes faces at humans.
- jumps from one tree to another.
- grabs things, mostly food from others.
- tries to scare children by chasing them.
- swings on the branches of trees.
- enters houses in search of food.
- imitates people as a sign of affection.

Page No. 27

Writing

Which animal resembles human beings the most? Form groups and discuss.

A chimpanzee resembles human beings the most. They exhibit several behaviours and emotions that are similar to the ones exhibited by humans.

Read the lesson carefully and write similarities between human beings and chimpanzees.

Human beings	Chimpanzees
They live in groups, also known as communities.	They live in a large social group called a community.
Their group consists of males, females and their offspring.	A community consists of adult male chimpanzees and twice as many female chimpanzees and their offspring.
They are social by nature, eating, resting and engaging in activities with others.	They are also social beings; they eat, rest and play together.
They use gestures and postures to communicate their moods.	Their vocal communication patterns, gestures, and body postures communicate their moods.
They exhibit different emotions and behaviours.	They exhibit emotions such as fear, distress, annoyance, anger, rage and enjoyment or contentment, similar to humans.

They use different tools for different purposes. For example: fishing rods	They also use tools. For example, they select twigs to shape into long slender fishing rods using their hands, lips and teeth.
They use rocks and hammers.	They are seen using rocks as hammers and anvils to remove nuts from hard shells.
They are intelligent beings with finer sensibilities and intellect.	They are also intelligent beings, much like humans.

4. SEVENTEEN ORANGES

Page No. 29

Warm up

1. Glutton
2. Couch potato
3. Yes, I have overeaten once when we went to the birthday party of my friend. We ate a lot of junk food and sweet treats and ended up feeling very sick. I felt very nauseous and my stomach felt like it would burst.

Page No. 33 and 34

Reading

A. Correct the following sentences.

1. The narrator ate the oranges along with the pips and the peels.
2. Pongo and the other policeman had seen some carts at the dock gate.
3. The narrator liked bananas, but he liked oranges best of all.
4. The narrator only took things when he found them.
5. Pongo let the narrator go as he had no evidence.
6. Clem opened the box in the kitchen and took out a large Dutch cheese.

B. Complete the sentences.

1. thief
2. apron
3. red-handed
4. policeman
5. seventeen oranges

C. Answer the following questions.

1. The narrator ate bananas all day.
2. When Pongo asked the narrator if he had anything to say, the narrator kept quiet. He was frightened because he had read a lot of detective stories to make the mistake of blabbing. He knew it was best to keep quiet as anything he says may be used as evidence against him.
3. Pongo counted the seventeen oranges and placed them carefully on the table.
4. The narrator was locked up because Pongo, the policeman, caught him red-handed while he was hiding the stolen oranges under his apron.
5. The narrator was feeling sick because he had eaten all the seventeen oranges along with the pips and the peels. He did this to destroy the evidence of the crime that he had committed.

D. What do you think? Discuss in groups.

1. Clem looked angry and smiled later because it was all a part of his planned theft. He was a careful planner who tricked Pongo, the policeman. One day, Clem was carrying a box as he was getting out of the docks. Pongo asked him what was inside the box. Clem told him not to make him open it as the cat inside would jump out and run. Pongo merely laughed and ordered him to open the box. When Clem opened the box, the cat jumped and ran out. Clem was furious. He ran after the cat shouting angrily. Later, Clem came back holding the same box while looking angrily at Pongo. He walked angrily all the way home. Later, he smiled. He opened the box in the kitchen and took out a large Dutch cheese.
2. Clem and the narrator both can be called a thief because they both stole things. Taking things without permission or without paying for them is called stealing and it is not a good thing. One should always be honest and do the right thing.

Page No. 34 to 36

Vocabulary

A. Use a word you learnt to complete the sentence.

1. pips
2. furiously
3. evidence
4. bulging
5. concealed

B. Match the body idiom with its meaning.

1. keep an eye on - watch in order to protect
2. cold feet - feel nervous before a big event
3. give a hand - help someone to do something
4. cry your heart out - cry very hard
5. all ears - listen fully/attentively

C. Use the right body idiom from the list in exercise B.

1. cried my heart out
2. give a hand
3. cold feet
4. keeps an eye
5. all ears

D. Circle the words that detectives use and find out their meaning.

Circle these words

- investigate – to examine something like a crime or a problem, especially to find the truth
- suspect - a person believed to have done something wrong, like committing a crime
- victim - someone who has been hurt, damaged, affected or suffered by the action of others
- culprit - a person who has done something wrong or committed a crime
- ponder – to think carefully about something,

E. Write a suitable affix for the following words. It may be a prefix, a suffix, or both.

1. appear - disappear
2. hope – hopeless/hopeful
3. comfort – uncomfortable/discomfort
4. usual - unusual
5. visible - invisible

Page No. 36

Language in daily use

Write an imperative sentence or command for the following situation.

1. Clean your room now!
2. Get out of here!
3. You will be punished.

Page No. 38 to 40

Grammar

A. Add a coordinator to form compound sentences.

1. My brother locked me up, yet I did not get angry with him.
2. You can visit the museum, or you can go shopping.
3. Mona laughed at him and Glen walked away angrily.
4. I was very frightened, but I did my best not to show it.
5. Shall I have bananas, or shall I have oranges?

B. Split the compound sentences into two independent sentences.

1. Pongo became angry. He shouted at me.
2. I swallowed the pips. I put some of the peel in my mouth.
3. I took a small knife from my pocket. I cut the oranges into large chunks.
4. Pongo left the cabin. I locked the door behind him.
5. Pongo counted them. He placed them carefully on the table.

C. Fill in the blanks with the simple present tense form of the verb.

1. play
2. drinks
3. give
4. flows
5. starts

D. Tick the correct option.

1. left
2. met
3. disliked
4. performed
5. saw

E. Fill in the blanks with the simple future tense of the verb.

- | | |
|----------------|-----------------------|
| 1. will drop | 4. will be angry with |
| 2. will do | 5. will be |
| 3. will attend | |

Page No. 40

Listening

Listen to a few facts about oranges and complete the following.

1. Brazil
2. immune system
3. slug repellent
4. citrus fruit
5. Vitamin C
6. Two other features about oranges are:
 - Marmalade is made from orange jam
 - Orange peels are used in face-washes and sunscreens.

Page No. 40 and 41

Speaking

A. Solve the riddle with either a ch, sh or th word.

- | | | |
|-----------|-----------|------------|
| 1. chairs | 3. three | 5. beneath |
| 2. shrub | 4. church | |

B. The narrator was working for a delivery company. Was it right of him to steal bananas or oranges? Discuss in class.

The narrator was working for the delivery company which means that he was responsible for the products that were in his care. It was his job to deliver the products safely without any damage or loss. It was not right on the part of the narrator to steal anything. He could have explained and requested the owner to give him some fruits or other things, but it was certainly not right for him to steal it. Stealing is not right and there are always consequences of this action.

Page No. 41

Writing

Write about a time of your life when you did something naughty and got caught.

This happened one day during my quarterly exams. It was Science exam the next day which is also the hardest exam. I find it very difficult to remember the answers for the questions. I kept putting off studying till the last minute and then it was just too late to cover all the portions. I really did not want to fail and upset my parents. So, I decided to cheat just this time and work harder the next.

I made small chits of paper and wrote down answers for the important questions. I hid these chits of paper in my pencil box, my socks, under my watch and any other place I could think of.

Finally, it was time for the exam. The teacher gave us our question papers and we started writing. I waited for the teacher to go to the other side of the classroom and then started copying from the chits that I had. I was so engrossed in my act that I failed to see the teacher standing right behind me. I was indeed caught red-handed.

I expected the teacher to be furious and take me to the headmistress. Instead, the teacher asked me to hand over all the chits that I had with me. I did as I was told. The teacher said calmly, "Nothing good ever comes from cheating. You might pass this exam, but you would have failed in the exam of life." She told me to continue and complete my exam.

I went back to my paper, but I could not help but feel very guilty and embarrassed. After the exam, I met the teacher and apologized for my behaviour and promised her it won't ever happen. As I walked out of the exam hall, I made a promise to myself, to study harder and to never ever cheat. It was a lesson well-learned.

5. SEA FEVER

Page No. 42

Warm up

Discuss

1. Christopher Columbus was adventurous because he was very passionate about sailing. He longed to be a sailor from a very young age and even started sailing at the age of 14. He showed a keen interest in making maps and charts and using them to navigate around the sea. His love for the sea and the desire to learn more about sea routes made Christopher Columbus an adventurous and successful person.
2. energetic, passionate, adaptable, think on the feet, daring

Page No. 43 and 44

Reading

A. How does the poet describe things in the first stanza?

1. lonely
2. shaking
3. grey

B. What kind of day does the poet ask for in the second stanza?

1. windy
2. with white clouds flying
3. seagulls crying

C. What does the poet want to go back to in the third stanza?

1. gypsy life
2. quiet sleep
3. sweet dreams

D. Answer the following questions.

1. A ship would need a star to steer her by.
2. The poet responds to the call of the running tide.
3. The poet says that it is a gypsy's life in the sea because there is no permanent home in the sea. Like gypsies who keeps moving from one place to another, the poet also keeps moving while sailing and does not stop at any one place.

4. The poet looks for a laughing fellow-rover (companion) who would tell him stories with great interest (yarn), while sailing. He is looking for a fellow sailor and wanderer, just like himself.
5. The poet refers to the whale and the sea gull to express his desire to lead a life at the sea just like the whales and sea gulls. Just like how they're free to move around, the poet also expresses a similar desire to be free to sail to his heart's content.

Page No. 44 and 45

Vocabulary

A. Add alliterations and complete the sentence.

1. rode on a red road
2. neatly and nicely done
3. under the beautiful banyan branch
4. chicken carefully before cooking
5. laying in the loft

B. Personify the following.

1. majestic
3. whispered
5. smiled
2. winking
4. glared

C. Separate the sea related words from the air-related words. Find out their meanings in a dictionary.

Sea-related words

- maritime – connected with human activity at sea
- anchor - a heavy metal object attached to a chain which is thrown from a boat into the water, to prevent the boat from moving
- towing - to pull a boat by fastening it behind another boat
- capsize – to cause a ship or a boat to turn upside down by accident while it is on water
- ahoy - a call used, especially by people in boats, to greet or attract attention
- aboard – to get onto a vehicle, a ship, aircraft or train
- landing – a boat reaching land

Air-related words

- cockpit – a small, closed area where the pilot sits in an aircraft
- transit – the movement of people and goods from one place to another
- aboard – to get onto a vehicle, a ship, aircraft or train
- aviation - the activity of flying an aircraft or designing and maintaining one
- landing - an aircraft arriving on the ground

Page No. 45

Activity

A. What do you collect at the beach? Write a sentence with an alliteration to describe it.

- Seashells
Suman sells seashells at the seashore with her sister Sheela.

B. Describe an imaginary holiday there.

My favourite holiday spot is a beach resort. It is so relaxing and fun at the same time. Beach resorts not only provide an opportunity to rest but also to rejuvenate by spending some fun time in the water. I love playing in the water. It would be a fun trip to visit a beach resort with my closest friends: Amit and Bunty.

We could have a great time playing football or volleyball near the beach. Once we start feeling hot, we could jump into the beach and cool ourselves in the cool water. We could practice how to float and even splash water at each other. After that, we could build castles in the sand. As a kid, I loved building castles. We could relive our childhood days by doing it again.

After a fun day at the beach, we could head to the resort. We would surely be starving, so we could order some delicious food to our room, eat to our heart's content and play a game of cards or charades to entertain ourselves. I am sure we would be tired after such an eventful day. We could just curl up and fall asleep in our comfortable beds. It would definitely be a holiday to remember!

6. AN AFGHAN ADVENTURE

Page No. 46

Warm up

Find out how much you know about Afghanistan.

1. Pashto and Dari
2. Kabul
3. Afghan afghani
4. President Ashraf Ghani
5. Salaam Alaikum
6. Snow leopard

Page No. 50

Reading

A. Rewrite the sentences in the lesson.

1. Suddenly he put into words what I had been thinking, "Look at this side. Isn't it a perfect hiding places for dacoits?"
2. Their eyes glittered under their turbans.
3. I did hear him, but his voice seemed to reach me from a distance.
4. I pressed myself back into the seat of the car, paralysed with fear.
5. I kept staring at the two men advancing towards the car at my side.

B. Write the words which reflect the feelings of the narrator.

- frightened, the blues, shrieked, paralysed with fear, trembled, verge of crying, to cry

C. 'I stared at her and at my brother and did what I had wanted to do all afternoon. I began to cry.' Take turns and narrate the events that lead to Puja crying.

- Puja's father worked as an engineer in Afghanistan. While her parents lived there, Puja and her brother lived with their uncle and aunt.
- Puja and her brother had come to spend their holidays with their parents in the small town of Kunduz.

- Puja was traveling in a car with her family. The wild rocky mountainside without any vegetation, the rocks and stones on both sides of the road; it all made her uncomfortable.
- She was worried that there would be dacoits hiding in these regions, but her father comforted her by saying that the people of Afghanistan were nice and friendly.
- On the way, their father stopped the car to check the rear wheels. They opened the doors to let in some fresh air. Just as Pooja looked at the road, she noticed two men walking towards their car.
- The taller of the two men charged at them. The other one limped behind awkwardly. Their eyes glittered under their turbans. They were coming straight at them, Puja shrieked and pointed at them. "Dacoits, dacoits."
- They asked their father to rush and take his place behind the wheels. Puja was paralyzed with fear and couldn't move. They tried to wind up the window but one of the men advanced towards their mother's window. They hurriedly tried to wind up the windows.
- Puja was so scared that she didn't realize she was rolling the window glass the wrong way, by then the man had reached her window. The man banged on the glass with his fist and hammered the door with his stick. Then he dropped the stick and rattled the door handle with both hands. He shouted and the words sounded like "Advia."
- Their father turned on the car quickly and they took off. They kept driving till they reached their destination unharmed.
- After dinner, the family decided to look up the meaning of the word "Advia". Their father brought a thick dictionary and found the word. When he read the meaning, his face was pale and his eyes looked troubled as he said in a flat voice, "Advia means 'medicine'."
- For a long time, no one spoke. Then their mother whispered, "Oh my God, oh my God," over and over again.

- Puja stared at her mother and at her brother and did what she had wanted to do all afternoon. she began to cry.

Page No. 50 and 51

Vocabulary

A. Circle the ones that are considered as crime in society.

Circle these words

- burglary, vandalism, fraud, treason, arson

B. Use these sound words to form suitable sentences. Use the hints in the box.

- | | |
|------------|------------|
| 1. clinked | 4. twanged |
| 2. clanged | 5. thudded |
| 3. creaked | |

C. Describe different types of glances.

- | | |
|-------------------|---------------------|
| 1. brief glance | 4. murderous glance |
| 2. angry glance | 5. secret glance |
| 3. curious glance | |

Page No. 52

Language in daily use

What would you say?

1. Get ready quickly! Hurry! We must leave or we will miss the bus!
2. I need a pen! Please!

Page No. 52

Listening

Write the observations made by Sherlock Holmes.

Sherlock Holmes observed that a cab had made two ruts with its wheels close to the kerb. There had been no rain for a week, so those wheels which left such a deep impression must have been there during the night.

He also observed the marks of the horse's hoofs, the outline of one of which was far more clearly cut than the other three, showing that it was a new shoe.

Since the cab was there after the rain began and not there at any time during the morning, it means that it must have been there during the night, which implies that it brought those two individuals to the house.

Page No. 52

Speaking

A. Find out what is unusual about the pronunciation of these words.

1. castle - 't' is silent
2. muscle - 'c' is silent
3. scissors - 'c' is silent
4. campaign - 'g' is silent
5. reign - 'g' is silent
6. tomb - 'b' is silent
7. whistle - 't' is silent
8. benign - 'g' is silent
9. debt - 'b' is silent

Page No. 52

Writing

Write an incident either real or imaginary that was scary.

One night, I woke up from a deep sleep, feeling parched. My throat felt dry and I reached for the bottle of water near my bed, only to find it empty. I got up and went out towards the dining hall. As I was walking towards the fridge, I saw a beam of light. I looked closely and noticed a white shadow outside the window. I stood there for a while, paralyzed, too afraid to move. I closed my eyes tightly. I waited a few seconds and opened them again. This time, I saw the shadow moving. It seemed like it was floating in the air.

I was terrified. I didn't know what to do. After a few seconds of contemplation, I decided it was the time to be brave. I went back to my room and found a torchlight. With all the courage that I could muster, I went near the window and pushed it open. What I saw startled me. I could not believe my eyes. It took me a few seconds

to wrap my mind around the scene before me. I took a deep breath. A breath of relief, actually. The floating ghost was nothing but my white kurta which was hung out to dry in the balcony.

It was indeed an adventurous night. I took a refreshing sip of water and went back to my room, feeling amused at my own antics. I couldn't wait to tell my parents about this interesting incident which at first scared the daylights out of me!

7. THE HAPPY PRINCE

Page No. 53

Warm up

A. Work in pairs and write the meaning of the following 'gold' idioms. Use a dictionary.

1. A heart of gold – very kind and good nature, something very valuable
2. As good as gold – well-behaved, genuine
3. All that glitters is not gold – something that looks nice and appealing externally is not always good, precious internally; things are not what they seem to be

Group Discussion

B. Which is more precious? Gold or a heart of gold? Give reasons.

A heart of gold is more precious than gold. When we have a heart of gold, it means we are kind and good natured. A person with a heart of gold is loved and respected by all. Any amount of money or gold cannot buy us love, affection and respect. However, a heart of gold can fetch us happiness, love, respect, good friends and much more which mere gold can never buy. Materialistic things in life are always short lived. On the other hand, kindness and goodness always wins over people. Love and friendship are all that we need in life and not money and riches. Only a heart of gold can fetch us genuine love and friendship in life.

B. Do you know a story of supreme sacrifice? Share it with your class.

The Last Leaf by O Henry is a story of supreme sacrifice. It is the story of a poor young

woman named Johnsy, who is seriously ill with pneumonia. She spends her days looking at the ivy vine tree outside her window. She notices the tree losing all its leaves one by one. She believes that when the tree loses its last leaf, she will lose her life too. Her neighbour, Behrman, an artist, decides to paint a leaf on the wall for her. So, he stays up all night to finish the painting. The next morning when Johnsy wakes up to see the leaf still on the tree (the painting), it gives her hope. She recovers but in a twist of fate, Behrman, who caught pneumonia while painting the leaf, succumbs to the illness. Behrman sacrificed his life to ensure Johnsy had enough hope to fight for her life and recover. It is indeed a story of supreme sacrifice.

Page No. 59

Reading

A. Describe the Happy Prince when he was a human being in a few sentences.

1. The Happy Prince lived in the Palace of Sans-Souci, where sadness was not allowed to enter.
2. During the day, he played with his companions in the garden.
3. In the evening, he led the dance in the Great Hall.
4. All his friends called him the Happy Prince.
5. When he was alive, he lived a life of luxury which was filled with happiness; he was unaware of the suffering of the poor.

B. Give a reason for the following.

1. The boy's mother had coarse, red hands because they were pricked by the needle, as she was a seamstress.
2. A curious crack sounded inside the statue because the prince's leaden heart had snapped right in two (broken in two parts).
3. The swallow did not want to pluck out the prince's eyes because he would be blind without them.
4. The young man looked happy because he found the beautiful sapphire which meant he could finish his play.

5. The Happy Prince looked dull and grey because all the precious stones and gold from his body were removed and given to the poor and needy.

C. Answer the following questions.

1. The swallow was flying to Egypt.
2. The drop of water that fell on the swallow was a tear that fell from the eyes of the Happy Prince.
3. From the high column, the prince saw the ugliness and the misery of his city where the poor were suffering from hunger, illness and poverty.
4. The swallow agreed to help the prince because he looked so sad as his people were in need of help.
5. The children were happy as they could buy bread now with the gold that the swallow had given them from the prince's body.

D. What do you think? Discuss in groups.

1. The swallow felt warm though it was cold outside because he had done a good deed. The prince told him about the poor woman with a tired face and coarse hands as she was a seamstress. Her son was sick, and they did not have any money to buy food or medicines. The swallow followed the prince's command and plucked a ruby from his sword and laid it on the table next to the woman's thimble. This helpful act made the swallow feel warm though it was cold outside.
2. No, the prince was not really happy. In fact, he was very unhappy. From the high column, he could see the unhappiness and misery of his people who were suffering from poverty. He was unhappy as he could not help them on his own.
3. God considered the leaden heart and the sleeping swallow, precious, as they had both lost their lives by doing good deeds. They had helped the poor and the needy. They were selfless, thoughtful and helpful to those in need. This act of kindness made them precious in the sight of God who then said that the little swallow and the prince belonged in his garden of paradise. He said that the swallow could sing forever in his paradise and the Happy Prince could live in his city of gold.

Page No. 60 and 61

Vocabulary

A. Write an antonym for the highlighted words.

1. murmured – shouted
2. new – old
3. soft – hard
4. indefinite – definite
5. ordinary – extraordinary
6. ascended – descended

B. Fill in the blanks with bear or bare.

1. bear 3. bare 5. bear
2. bare 4. bear

C. Write one word to interpret what the sentences mean.

1. peculiar 4. angelic
2. valuable 5. immobile
3. forever 6. sorrowful

D. Complete the following.

1. chunks 4. block
2. dash 5. gulp
3. mouthful

Page No. 62

Language in daily use

1. Don't worry, everything will be fine. We are here with you always.
2. Relax! We will solve this together. I am always there for you.

Page No. 64 to 66

Grammar

A. Fill in the blanks with a suitable subordinator.

1. Although 4. after
2. because 5. before
3. If

B. Add a subordinating conjunction after, although, before, because, to make a complex sentence. Add a comma wherever necessary.

1. I will stay with you always because you are blind.
2. Before he had opened his wings, a third drop fell.
3. Although the poor little swallow grew colder and colder, he would not leave the prince.
4. He is no longer beautiful because he is no longer useful.
5. After the frost, the snow came.

Revision

A. Fill in the blanks with the present continuous form of the verb.

1. is watching 4. is driving
2. are crying 5. are waiting
3. are practising

B. Write the correct past continuous form of the verb.

1. was playing 4. was talking
2. were standing 5. was moving
3. were chasing

C. Rewrite the sentences using the future continuous tense.

1. The apple tree will be bearing fruit in winter.
2. I will be staying in Mumbai for a week.
3. All the employees will be attending a meeting at 5 o'clock this evening.
4. We will be shifting into our new office next year.
5. The children will be sleeping when you come home tonight.

Page No. 66

Listening

Listen to a poem and write a short paragraph on what it is about.

Winter Time by Robert Louis Stevenson describes a winter day as experienced by a

child. The sun sets very late in his place. There are just a few hours of sleep that he gets. He rises when it is dark, though it is morning. He dresses in the candlelight. It describes how the child explores the world around him. The child sits by the fire to warm himself and dresses in a comforter and cap as it is very cold outside. He uses a reindeer-sled to explore the countryside. The poet uses the imagery of 'wedding cake' to describe how the house, hill and lake are covered in snow, just like a frosted cake.

Page No. 67

Speaking

A. Circle the word which has a different sound.

- | | | |
|---------|--------------|---------|
| 1. prey | 3. gate | 5. know |
| 2. easy | 4. character | |

B. Discuss any incident which made you sad.

One day, I was on my way to school with my father. He was driving me and my brother to school. We were seated comfortably inside the air-conditioned car, wearing clean uniforms and shoes. We were also carrying yummy snacks with us for breaktime. As I looked out of the window, I noticed some kids dressed in rags. They were picking trash that was lying on the road. They were filling their sacks with the garbage lying around. I felt sad thinking about how unfair life is to some children who don't get to have a childhood. While most of us grow up in comfortable homes and receive a good education, some unfortunate children have to pick up rags to fill their stomachs. It made me very sad to think about the plight of these children.

Page No. 67

Writing

Write what happiness means to you.

Happiness to me, means having a good life. A life that is filled with comfort, safety and security. Often times, we think that expensive things would make us happy. But that kind of happiness is short-lived as we lose interest

once that thing becomes old. On the other hand, being in a happy family, surrounded by loving friends, under a safe roof, is everlasting happiness. There are so many people out there who do not have a roof over their heads, clothes to cover their body or food to fill their stomachs. We, fortunate ones, have all this and more.

To me, happiness is living with my family in our comfortable home. Knowing that I am loved and cared for makes me very happy. Knowing that I have friends who I can trust makes me happy. Knowing that I will wake up every day feeling healthy, loved and safe makes me the happiest person in the world. This is what happiness means to me.

8. OUR RAINBOW WORLD

Page No. 68

Warm up

1. Name a few things which you would like to change in our world.

- I would like to make our planet less polluted and eco-friendly.
- I would like to put an end to wars and crime.
- I would like to end discrimination and create a world where everyone lives in harmony.
- I would like to create a world that provides equal opportunities to one and all.

2. What kind of a world would you like to live in? Write two sentences about it.

- I would like to live in a world that is free from global warming, wars, violence, crimes and inequality. I would like a world that promotes harmony, equality and love for one and all.

3. Class Discussion

What changes would you like in the world after Covid 19?

- I would love to see a world that is free from pollution. The selfish actions of humans have affected our planet and destroyed it beyond repair. I would like to see a world where each person takes responsibility to take care of

the planet and all its elements. A world that we can proudly leave behind for our future generations.

- I would like to see a world where humans vow to take care of animals and birds around them.
- I would like to see a world where all humans, irrespective of their religion, caste, gender, and nationality live together in peace and harmony.

Page No. 69 and 70

Reading

A. What does the poet want to do with the following?

1. box of colours

The poet wants to paint a magic land, with rainbows over purple hills and green seas and golden sand.

2. pot of pencils

The poet wants to write fantastic words, poems about secret forests, shy squirrels and soaring birds.

3. packet of seeds

The poet wants to make a garden grow, with blooming poppies, pinks and petunias.

B. Write the different action words the poet uses to imagine a brand-new earth.

- | | | |
|---------|----------|----------|
| 1. make | 3. plant | 5. write |
| 2. bake | 4. paint | 6. sing |

C. Answer the following questions.

1. The poet will paint rainbows over purple hills.
2. The colours in the rainbow are red, orange, yellow, green, blue, indigo, violet.
3. Forests have secrets which only the birds and animals living in the forest are aware of.
4. The poet wants to create a garden with poppies, pinks and petunias which are blooming row after row.
5. The rainbow world is not real; it is the poet's imagination. The poet wishes to create a world like the rainbow world.

Page No. 70 and 71

Vocabulary

A. Use colour adjectives to describe your neighbourhood briefly.

It was Saturday morning. I was excited to spend the weekend relaxing after a very hectic week. I woke up early on Saturday morning as the rays of the orange sun poured through my windows. I yawned and stretched. I got out of bed and walked towards the window to open it and let some fresh air in. The scene outside looked very picturesque. The clear blue skies with spotless white clouds. The green grass carpet lining the sides of the pavement. The brown trees with dark green leaves. Everything looked so colourful. It looked like a picture from a story book. I spotted black cows, green parrots, brown sparrows, white cats, brown puppies and yellow chicks in the open farm nearby. I couldn't look away. Just then, I saw a group of kids walking out of their saffron houses. They carried several things with them: yellow bats, red balls, violet helmets, indigo balloons, pink umbrellas and more. They spotted my curious face and bright red tee shirt peeping from the window. They waved and asked me if I would like to join them in their games. I instantly said yes. I told them I would be there in a minute. As I was getting ready to meet them, I felt someone calling out my name. It seemed like it was coming from a distance. It continued, and then I felt a hand pulling my leg and that woke me from my deep sleep. I realised the picturesque scene was just a dream. I could see my mother in her yellow saree clearly now. She asked me to get ready for school. It then dawned upon me that it was Monday morning and a whole week to go before I could relax again! What a colourful dream that was indeed.

B. Add a suitable word to form compound words, which are related to nature.

1. straw + berries = strawberries
2. moon + light = moonlight
3. water + falls = waterfalls
4. earth + quake = earthquake
5. dragon + fly = dragonfly

C. Write a suitable description for any animal.

- | | |
|------------------|--------------------|
| 1. fast cheetah | 4. fierce lion |
| 2. clever monkey | 5. friendly dog |
| 3. slow turtle | 6. poisonous snake |

Page No. 71

Activity

A. Observe the two pictures. Which one do you like better? Why?

I like the second picture as it is very colourful. The colours make the picture come alive. The brown trees, the green and orange leaves, the silver stream, the brown ground and the clear blue skies. All these colours add more beauty to the picture.

B. Imagine a world without colours. How would that be?

Colour colour colour everywhere,

Without which, everything would be bare.

Our world is filled with yellow, red and green,

Without which, no beauty would be seen.

The blue skies, green earth and the mountains that look like gold,

Without which, our stories can never be told.

Wake up, admire and be grateful for the colours that come through,

Without which, it would be a blank canvas for me and you.

9. PAID IN FULL - SECTION A

Page No. 72

Warm up

Group Discussion

Discuss the following quotes.

1. Kindness is free; let's pass it on.

This quote means that one does not have to spend any money to be kind. It is easy to be kind as you do not need anything else to be kind. You can just be kind by helping others who need help. By doing so, you are teaching others to be kind too. This way, you can pass on the kindness from one to another.

2. Whatever else you can be in this world; be kind. Everyone wishes/wants to be so many different things in life. At times, some of these wishes come true, but at other times, it remains a dream. While becoming all these things may not always be possible, but it is always possible to be kind. So, one should always work towards being kind as kindness is something which no one can take it away from you or stop you from being kind. Always choose to be kind.

Page No. 73 and 74

Reading

A. Circle the words that describe Dr Kelly.

hard-working, grateful, determined, kind, concerned, specialist

B. Class Discussion

1. After a long struggle, the battle of curing the woman was won. Here, the word 'battle' refers to the illness of the woman. The illness was so rare that the other doctors were baffled. They had no idea how to cure the illness. So, they called in a specialist, Dr Howard Kelly. He gave special attention to the case and after a long struggle, the battle was finally won where he cured the woman of her illness.
2. Dr Kelly returned the kindness that was shown to him by curing the woman of her illness and paying her bill. Many years before, the young woman had given young Kelly a glass of milk when he was very hungry and weak. Years later, Dr Kelly found the woman with a rare illness. He treated her and also paid her bill. He left her a note on the edge of the bill which said, 'Paid in full with one glass of milk.' Dr Kelly not only cured the illness but also paid the bill in full for her treatment and consultation.

C. Answer the following questions.

1. The young boy was selling goods from door to door to pay his way through school.
2. He was going to ask for a meal because he suddenly found that he had only one dime left, and he was very hungry.
3. When Howard Kelly left the house, he not only felt stronger physically, but his faith in God and man became stronger too.

4. The boy became a doctor, a specialist, much later in life.
5. Dr Howard Kelly paid for the lady's treatment and consultation.

Page No. 74

Vocabulary

A. Unscramble the character of someone who never quits.

- | | |
|---------------|--------------|
| 1. POSITIVE | 4. CHEERFUL |
| 2. OPTIMISTIC | 5. CONFIDENT |
| 3. HOPEFUL | |

B. Write five homographs. Explain the difference in their meaning.

1. desert – a hot, arid region
desert – to leave or abandon
2. fine – of good quality/condition
fine – an amount of money paid as penalty
3. object – a thing that can be felt
object – to reject or to oppose
4. wave – a hand gesture to greet someone
wave – sea water coming into the shore
5. tear – a drop of water from the eye
tear – to rip something

Page No. 75

Language in daily use

Write how you will say thank you for the following.

1. Thank you! So thoughtful of you. I really appreciate all your help.
2. Thank you so much! I would have never finished this project without your help. So kind of all of you to help me.

Page No. 75

Speaking

A. Fill in the blanks with words with similar i sounds.

- | | | |
|---------|---------|---------|
| 1. mile | 3. high | 5. mice |
| 2. sigh | 4. nice | |

B. Discuss the different ways one can show kindness through role play.

- Imagine you're walking down the road to visit the nearby shop. On your way, you see an old woman on the ground, looking lost and sad. You rush to her to find out what is happening.

You: Hello ma'am. What happened? How can I help you?

Lady: I slipped and fell down. I can't stand up. Please help.

You: Sure, please hold my hand. Let me help you.

Lady: Thank you. I also lost my purse. I had it with me, now I can't find it.

You: I think it must have fallen from your hand and landed under this car. Wait, let me check. Ah wait! I can see it. Let me get that for you... here you go.

Lady: Thank you so much! You're a very kind person. God bless you.

- You can also show kindness to birds and animals around you. You could place a bowl of water outside your window, feed the stray animals near your house and so on.

Page No. 75

Writing

Imagine Dr Howard Kelly having a dialogue with a colleague after recognising the lady from his town. What do you think he would say?

Dr Kelly: Oh my God! I can't believe this!

Doctor: What happened?

Dr Kelly: The patient you asked me to take a look at, I know her. Many year ago, when I was a young boy, I was very hungry and weak one day.

Doctor: And then what happened?

Dr Kelly: I knocked on this kind lady's door and she fed me a glass of milk.

Doctor: Wow! That's so kind of her.

Dr Kelly: Yes! Indeed. She saved me that day when I was ready to give up. She not only made me feel stronger physically, but also restored my faith in man and God.

Doctor: I can't believe you would meet her like this after so many years. Unfortunately, she is very sick.

Dr Kelly: Yes, but I am not going to let anything happen to her. I will find a way to cure her.

Doctor: I hope so too, Dr Kelly. You're the specialist, after all!

Dr Kelly: I am where I am today only because of the kindness she showed me that day. Now, it's my turn. I have to repay the kindness. I will find a way to cure her.

Doctor: I am sure you will, Dr Kelly. Good luck to you.

Dr Kelly: Thank you. Now, let's get to work! We have a life to save!

9. THE HOUSE OF 1000 MIRRORS - SECTION B

Page No. 76

Warm up

Group Discussion

1. A smile disappears to its secret hiding place.
2. One smile makes two. Smiles can create an atmosphere of joy and laughter.
3. One smile can become two when one person smiles at someone and the other person smiles back, it becomes two. Smiles are contagious and it can pass on from one person to the next.

Page No. 78

Reading

A. What was the difference between the two dogs? Complete the following.

1. The first dog was happy.
1. The second dog was not so happy.

2. The first dog bounded happily up the stairs to the doorway of the house.

2. The second dog climbed up the stairs slowly with his head hung low.

3. The first dog looked through the doorway with his ears lifted high and his tail wagging as fast as it could.

3. The second dog looked inside sadly.

4. The first dog found himself looking at 1000 other happy little dogs with their tails wagging just as fast as his

4. The second dog found himself looking at 1000 unfriendly looking dogs staring back at him.

5. The first dog found the place wonderful.

5. The second dog found the place horrible.

B. Answer the following questions.

1. The happy dog came to know of the House of 1000 Mirrors and decided to go there.
2. The happy dog bounded happily up the stairs. He was positive, happy and smiling when he looked inside. His ears were lifted high and his tail was wagging fast.
3. The happy dog saw 1000 other happy little dogs with their tails wagging just as fast as his. When he smiled at them, he was surprised to see 1000 smiles just as warm and friendly.
4. The second dog slowly climbed up the stairs with his head hung low. He was unhappy and grumpy.
5. The second dog saw 1000 unfriendly looking dogs staring back at him! When he growled at them, he was horrified to see the 1000 little dogs growling back at him.

C. Class Discussion

1. The first dog found the place wonderful because it was a positive experience. It was a reflection of his positive attitude and actions. The happy dog bounded happily up the stairs to the House of 1000 Mirrors with his ears lifted high and his tail wagging fast, when he looked inside. To his great surprise, he saw 1000 other happy little dogs with their tails wagging just as fast as his. When he smiled at them, he was surprised to

see 1000 smiles just as warm and friendly. As he left the house happily, he thought to himself that he would visit often as it was a wonderful place.

2. The second dog found the place horrible as it was a negative experience. It was a reflection of his negative attitude and actions. The second dog slowly climbed up the stairs to the House of 1000 Mirrors with his head hung low. When he looked inside, he was shocked to see 1000 unfriendly looking dogs staring back at him! When he growled at them, he was horrified to see the 1000 little dogs growling back at him. As he left the house sadly, he thought to himself that he would never visit again as it was horrible place.

Page No. 79

Vocabulary

A. Write antonyms for the following.

1. warm and friendly – hostile, unfriendly
2. horrible - pleasant
3. head hung low – head held high
4. often - seldom
5. surprised – predicted, expected

B. Use a suitable movement word.

1. swaying
2. swinging
3. rocking
4. vibrating
5. fluttering

Page No. 80

Language in daily use

Give two instances when you used self-talk.

1. You did not score good marks.
 - It's okay. It happens sometimes. Next time, I will work harder and score better marks. I will mark out the portions and complete a bit of it every day so it's not too much towards the end. I'm sure I can do this. I trust myself.
2. You took part in a competition but did not win a prize.

- Ah! It hurts to lose, but it's okay. I have to remember that a competition is not always about winning. It is about the spirit in which we participate. Sometimes, we win and sometimes, we lose. I will do better next time. Kudos to me for at least trying and giving it my best shot. Bravo! I am proud of myself!

Page No. 80

Listening

Listen to a few smile facts and fill in the blanks.

1. contagious
2. uplift
3. babies
4. facial muscles
5. polite, genuine

Page No. 80 and 81

Speaking

A. Say each word aloud. Write the number of syllables these words have.

Word	Number of syllables
1. bounded	2 syllables
2. horrified	3 syllables
3. wonderful	3 syllables
4. staring	2 syllables
5. horrid	2 syllables

B. All the faces in the world are mirrors. Discuss this thought in groups.

This thought means that all the faces in the world are a reflection of what we are. For example: if we smile at a person, that person smiles back. If we frown at someone, that person frowns back. Just like how a mirror shows us our reflection, so do all the faces in the world. So, if we want the world to be kind, warm and friendly to us, we should also be kind, warm and friendly to them. One gets what they give. So always give good, and it comes back. Just like the mirror, which shows us exactly what we show before it. We should always smile and try to be happy, and the world will smile back at us.

Writing

Imagine if the happy dog and the unhappy dog were to cross each other. What would they say to each other?

Dog 1 (Happy dog): Oh, Hi there! I see you are just coming out of the House of 1000 Mirrors.

Dog 2 (Unhappy dog): Oh, yes! I rather not talk about it. It's something I don't intend to remember for long.

Dog 1 (Happy dog): What? Why? I loved the experience! It's something I hope to remember for a very long time. If I may ask, what did you see up there that was so terrible?

Dog 2 (Unhappy dog): Oh, I saw 1000 unfriendly, unhappy dogs staring at me. And then, when I growled at them, 1000 of them growled back! Can you imagine how scary that would have been! Hmph! Tch tch!

Dog 1 (Happy dog): Oh, my! Terrible indeed. I am sorry you had such a bad experience.

Dog 2 (Unhappy dog): Sigh! What an unfortunate day, as it always is. So, what did you see?

Dog 1 (Happy dog): Oh, I saw 1000 happy dogs smiling at me. It was so warm and friendly in there!

Dog 2 (Unhappy dog): Whaaaaat! How is that possible. We both went to the same place but had such different experiences!!!

Dog 1 (Happy dog): I know. I am surprised too. Hey, do you want to visit the place again? Maybe we could find out what the mystery is about?

Dog 2 (Unhappy dog): Sure, let's do that. Cmon, let's go.

Dog 1 (Happy dog): Okay, so we're here now and I can see two dogs: one happy and the other one, not so happy.

Dog 2 (Unhappy dog): Yeah me too. That's confusing.

Dog 1 (Happy dog): Why don't we try to smile and see what happens?

Dog 2 (Unhappy dog): Ummm okay! Let's smile now. Eeeee

Dog 1 (Happy dog): Oh, my God! Where did the unhappy dog disappear to? I can see two happy dogs now.

Dog 2 (Unhappy dog): Yes! I love this. I wonder why this didn't happen before. Should we try growling now? Just to see what happens?

Dog 1 (Happy dog): Ummm okay... Grrrrrr!

Dog 2 (Unhappy dog): Oh, boy! The growling dogs are back!

Dog 1 (Happy dog): Hey! I know what this is. The mirror shows us what we show! If we show a smile, it smiles back and if we growl, it growls back.

Dog 2 (Unhappy dog): Ahhhh! Now, I see it. Thank you for showing me this.

Dog 1 (Happy dog): Well, you know what they say – what are friends for. So, my friend, always remember "All the faces in the world are mirrors." We get what we give.

Dog 2 (Unhappy dog): I get that now. Thanks, friend!