

1. 'I DON'T HAVE A FLOWER'

ANSWERS

Warm Up

1. Chrysanthemum
2. Jasmine
3. Hibiscus
4. Marigold

Read and Understand

- A. 1. (b) 2. (a) 3. (c)
- B. 1. True 2. False 3. True 4. False 5. False
- C. 1. The emperor was worried because he was afraid that he wouldn't find a good successor.
2. Chang was sad because his seed did not flower.
3. Chang's father encouraged him by saying that he had tried his best and should show the pot to the king.
4. Chang told the emperor the truth. He told the emperor that in spite of his best efforts, the seed did not grow into a flower.
5. Yes, because he was a honest and truthful boy.
- D. HOTS — Because they were boiled. Boiling kills the baby plant present in the seed.
- E. 1. to learn 2. to bake 3. to make 4. to stay
- F. 1. singing 2. walking 3. smoking 4. playing
- G. 1. successor 2. occurred 3. Strangely 4. amazement

H.

A	J	H	O	N	O	U	R	D	F	G	R	T	L
B	U	S	G	O	O	D	N	E	S	S	I	H	O
Q	S	I	N	C	E	R	I	T	Y	P	G	O	Y
K	T	R	T	U	I	O	I	O	L	T	H	N	A
Y	I	F	R	E	W	Q	F	D	S	S	T	E	L
P	C	L	K	J	F	A	I	R	N	E	S	S	T
R	E	S	P	O	N	S	I	B	I	L	I	T	Y
F	R	A	N	K	N	E	S	S	N	N	B	Y	I

- I. 1. Hari is perfectly cut out to be a soldier.
2. I am looking forward to the holidays.
3. My mother never allows us to get away with laziness.
4. Watch out for the next exciting episode!
5. Turn on the lights please.
- J. 1. No 2. No 3. Yes 4. Yes

M. One day, I was playing with a ball in my room. The ball hit a flower vase and it fell down and broke. After some time, my mother came into the room. She was angry to see the broken flower vase. She called me and asked, "Did you break the vase?" I said, "No". Then I told her that I had seen a cat in the room and it might have broken the vase. My mother did not punish me. Initially, I felt happy but then I began to feel sorry for lying to my mother. It was very wrong on my part to tell a lie. I went straight to my mother and told her the truth. She patted me and said, "I am really proud of you for telling the truth."

A POEM AS LOVELY AS A TREE (POEM)

ANSWERS

Read and Understand

A. 1. (a) 2. (b) 3. (b) 4. (a)

B. Do it yourself.

C. 1. A tree 2. She prays by lifting her leafy arms. 3. Robins.

4. He calls himself a fool because he cannot create what God has created.

2. A SPEECH TO SAVE THE ENVIRONMENT

ANSWERS

Warm Up

1. (b) 2. (d) 3. (a) 4. (c)

Read and Understand

1. (b) 2. (b) 3. (a)

- B. 1. True 2. False 3. True 4. True 5. True

- C. 1. The three environmental problems we are facing these days are:

- Air, water and land pollution
- Hole in the ozone layer
- Deforestation

Due to human activity, air, water and land have become dirty.

Air is polluted due to smoke from vehicles and factories. Water is polluted due to oil spills, waste of factories, etc.

Land is polluted because of fertilisers and non-biodegradable things.

The ozone layer in the atmosphere protects us from harmful ultraviolet rays of the sun. Due to the hole in the ozone layer, harmful ultraviolet rays reach us. They can cause eye diseases and skin cancer.

Deforestation means cutting down of trees. It has led to the destruction of many plant and animal species.

2. We can utilise waste material by reusing or recycling it. We can share things with needy people.
3. Instead of wasting money on making arms, we should utilise money in making our environment better. The money can be used to end poverty.

- D. HOTS—The atmosphere of the Earth is divided into many layers. One of the layers is the stratosphere.

In the stratosphere, there is a thin layer of ozone gas. The ozone layer is like a protective umbrella which protects the Earth from harmful ultraviolet rays (UV). In the 1980s, scientists discovered a hole in the ozone layer. The hole was caused by chlorofluorocarbons (CFCs). These are man-made chemicals and are used in refrigerators, air-conditioners and aerosol sprays. CFCs damage the ozone layer. UV rays can pass through the ozone hole. These rays can cause skin cancer and eye problems. These rays also harm plants and animals.

- E. 1. seldom (Adverb of frequency)
2. Where (Interrogative Adverb)
3. almost (Adverb of degree)
4. entirely (Adverb of degree)
5. How (Interrogative Adverb)
6. Frequency (Adverb of frequency)

- F. 2. more neatly 3. more sweetly 4. the farthest

- G.** 1. Losing 2. breathe 3. privileged 4. tremendous 5. challenge
- H.** 2. United Nations
3. World Health Organization
4. British Broadcasting Corporation
5. United Nations International Children's Education Fund
6. World Wildlife Fund
7. The Energy Research Institute
8. United Nations Educational, Scientific and Cultural Organization
- I.** 1. hood 2. less/ful 3. ly 4. ful/less 5. less/ful 6. ly
- J.** 1. Activities such as burning of coal, diesel, petrol and natural gas have increased the amount of greenhouse gases like carbon dioxide and methane in the air. They are good at absorbing heat. This is called the greenhouse effect.
2. The rise in the temperature of the Earth due to the increased greenhouse effect is called global warming.
3. The harmful effects of global warming are as follows:
○ It destroys crops and affects the life cycles of plants and animals.
○ It causes storms and floods. It causes glaciers and ice sheets to melt at the North Pole and South Pole.
- M.** The picture shows how smoke from factories is contributing towards air pollution. Air pollution is very harmful. Polluted air can lead to respiratory diseases. To reduce pollution, filters should be used in the chimneys of factories. The factories should be located far away from human settlements. Cottage industries and small-scale industries should be given preference over large-scale industries.
- N.** Do it yourself.
- O.** Do it yourself.

SOPHIE (POEM)

ANSWERS

Read and Understand

A. 1. (b) 2. (c) 3. (a) 4. (a)

B. 1. True 2. True 3. False

C. 1. The speaker is going to read a poem on stage.

2. The speaker began by speaking slowly and clearly.

3. The speaker says the following lines because he wants to focus on his/her recitation only.

E. 1. Do it yourself. 2. Do it yourself.

3. INDIAN WOMEN SHINE AT THE OLYMPICS

ANSWERS

Warm Up

1. Geeta Phogat
2. Sania Mirza
3. Mithali Raj

Read and Understand

- A. 1. (b) 2. (c) 3. (c)

- B. 1. Mary Kom was born on 1 March 1983 in Manipur.
2. When Mary Kom was small, she helped her parents by assisting them in the fields, while fishing and making charcoal.
3. Mary Kom kept her interest in boxing a secret because boxing was not considered a good sport for women.
4. P V Sindhu was born on 5 July 1995, in Hyderabad, India.
5. She won a bronze medal at the Glasgow Commonwealth Games in 2014.
6. Mary Kom: Arjuna Award, the Padma Shri Award, the Rajiv Gandhi Khel Ratna Award (Any two)

P V Sindhu: The Arjuna Award and the Padma Shri Award

- C. Both sportswomen have performed well and continue to perform well because of their hard work and total dedication to their sports.
- D. 1. The gate was opened by Hari.
2. Gifts were brought by Santa Claus.
3. India was ruled by the British till 1947.
4. A present was given by Pranav to Raju.
5. My book was borrowed by Lata.
- E. 1. athlete 2. inspired 3. arena 4. secret 5. charcoal 6. performance
- F. 1. (c) 2. (b) 3. (a)
- G. 1. Bronze Medal.
2. 17 March 1990.
3. Padma Shri Award, the Arjuna Award and Rajiv Gandhi Khel Ratna Award.
- J. I would ask her:
- How does she keep herself fit?
 - Does she get time to entertain herself?
 - Who's her role model?
- K. Do it yourself.

PERIODIC TEST—3

- A. 1. (a) 2. (c) 3. (c) 4. (b) 5. (c)
- B. 1. One brother was a gardener and the other was a woodcutter.
2. The brothers sold their material in the village market.
3. The problem of the brothers was that they had no one to look after their house or cook their meals.
4. Mrs Wilson, who lived in the village, came to look after the brothers.
5. We learn that one should not be greedy and not exploit nature for our personal benefit.
- C. Do it yourself.
- D. 1. The bees are buzzing around the plants.
2. The policeman stopped the car for rash driving.
- E. 1. goes 2. has eaten 3. is playing 4. has left
- F. 1. to learn 2. to bake
- G. 1. faster 2. more difficult
- H. 1. The gate was opened by the watchman.
2. Gifts were bought by father for all of us.
- I. 1. The king did not punish Tenaliraman because he was pleased by his clever answer.
2. The giant noticed that the trees were covered with blossoms; the birds were flying around, chirping with delight and there were flowers all around.
3. Chang was sad because his seed did not flower.
4. We can utilise waste material by reusing or recycling it. We can share things with needy people.
5. Mary Kom kept her interest in boxing a secret because boxing was not considered a good sport for women.

4. PERMANENT HELPERS

ANSWERS

Warm Up

H	A	R	D	W	O	R	K	I	S	T	H	E
8	1	18	4	23	15	18	11	9	19	20	8	5
K	E	Y	T	O	S	U	C	C	E	S	S	
11	5	25	20	15	19	21	3	3	5	19	19	

Read and Understand

- A. 1. (a) 2. (c) 3. (a)
- B. 1. (c) 2. (d) 3. (a) 4. (b)
- C. 1. Shravan was hardworking, self-reliant and a cheerful boy. He was truthful, studious and intelligent.
2. Ravi wanted to make fun of Shravan in front of others because Ravi had been able to answer all the questions that morning while he himself could answer none. Moreover, Shravan was poor and Ravi was a rich boy.
3. The teacher scolded Shravan because he had heard Shravan say that he had eight permanent workers who helped him always. The teacher thought that Shravan was lying before the others.
4. We learn that we should rely on ourselves for our work. We should not depend on others as was the case with Ravi.
- D. HOTS—A good student should be hardworking, self-reliant, truthful, obedient and helpful.
- E. 2. Samarth said that Reena was unwell.
3. Nidhi said that Sohan was writing a letter.
4. Mathew said that Tom had eaten a piece of cake.
5. Jaspreet said that Sagar was talking to Minu.
6. Vineet said that Reema had shifted to her new flat the day before.
- F. 1. said 2. told 3. told 4. said
- G. 1. Vidisha said that Netra had gone to Hyderabad.
2. Mitu said that the school was closed that day.
3. Kalyani said that those pens were new.
4. Suresh said that Mr Gupta was tired then.
- H. 1. she; him 2. he; him 3. she
- I. 1. pampered 2. recess 3. studious 4. dissatisfaction
- J. 1. (e) 2. (a) 3. (b) 4. (c) 5. (d) 6. (f)
- K. 1. Arjun Bajpai. 2. Kilimanjaro. 3. Seven years old.

N. 25 March 2015

Today, our class teacher, Neha Ma'am scolded me for something I had not done. Actually, my benchmate, Anmol was trying to take my new eraser. I was telling him not to do so. Neha Ma'am thought that we were fighting. She asked me to come in front of the class. She scolded me in front of the whole class. I tried to explain but she did not listen. I had tears in my eyes. I came back to my seat and the whole day I was in a sad mood.

O.

MESSAGE

20 March 2015

9.30 a.m.

Varun

I am leaving home because I have to meet someone urgently. I will call you in the evening at 6.00 p.m.

Kiran

P. Do it yourself.

THE LITTLE GENTLEMAN (POEM)

ANSWERS

Read and Understand

- A. 1. (a) 2. (c) 3. (c) 4. (a)
- B. 1. The Little Gentleman. 2. We should eat according to hunger. We should not overeat.
3. We should not waste food because other people may need it.
- C. 1. The question is wrong. (Please omit this question). 2. seat 3. loaf 4. tea
- D. Do it yourself. E. Do it yourself.

5. THE HAPPY MAN'S SHIRT

ANSWERS

Warm Up

1. exercise every day 4. eat green vegetables and fruits

Read and Understand

- A. 1. (a) 2. (b) 3. (b) 4. (a)
- B. 1. False 2. True 3. False 4. False 5. True 6. False
- C. 1. The king's councillors and courtiers were worried because the king was not getting well in spite of having tried all medicines.
2. The doctors could not cure the king because they were not able to find out the cause of his disease.
3. The old man suggested to the king that he should sleep just one night in the shirt of a happy man.
4. The man with no shirt was happy because he worked hard and had no time to worry unnecessarily. He lived a simple and carefree life.
5. The king was cured when he understood that he needed to work hard and lead a simple life to become healthy.
- D. HOTS— Health is wealth because a sick man cannot enjoy anything. A sick person cannot carry out his/her duties properly and he/she has to be dependent on others. A healthy man/woman is cheerful and brings joy wherever he/she goes. Thus, we see that health is wealth.
- E. 1. won't they 2. can't you 3. shouldn't we 4. isn't it 5. aren't you
- F. 1. She asked Mohit what was kept in the big drawer.
2. Mr Sudesh asked Anil where her office was.
3. Grandpa asked Raj who his class teacher was.
4. Mita asked Ratnesh why Victoria Memorial was built.
5. Grandma asked Mita when she would go to New Market.
- G. 1. Ketaki asked Sneha whether she liked reading comic books.
2. Murali asked Mansi whether she was in class V A or VI B.
3. Mahima asked Ravi whether he knew French.
4. Deepak asked Shobha if she was a student of Blossoms Public School.
5. The bank officer asked Sunil whether he was a new customer.
6. Tiya asked Parinita whether it was her dog.
- H. 1. prescribed 2. messengers 3. appetite 4. necessary 5. courtiers
- I. 1. green with envy 2. feeling blue 3. white with fear 4. purple with rage
- J. 1. (d) 2. (a) 3. (f) 4. (b) 5. (e) 6. (c) 7. (g)
- K. 1. Yes 2. No 3. Yes 4. No 5. Yes

- N. 1. well 2. better 3. better 4. best
O. Do it yourself.

LIFE SKILLS—2

A–K. Do it yourself.

MODEL TEST PAPER

- A. 1. (b) 2. (a) 3. (a) 4. (c) 5. (b)
- B. 1. Any two of the seven examples in the first paragraph of the story are acceptable.
2. Bunty was big, strong and rude. So, all the children were afraid of him.
3. The new boy's name was Shreyas. He was tiny and could not walk. So, he carried crutches to help him walk.
4. Major Khare, Shreyas' father, came back with Miss Bhushan and Shreyas.
5. Only a coward bullies weak and helpless people.
- C. Do it yourself.
- D. Do it yourself.
- E. 1. gang 2. crowd 3. fleet 4. flock
- F. 1. Past perfect tense 2. Simple past 3. Past continuous 4. Past perfect continuous
- G. 1. singing 2. smoking 3. cycling 4. playing
- H. 1. seldom; Frequency 2. Where; Interrogative 3. almost; Degree 4. entirely; Degree
- I. 1. Suresh said that he was not feeling well that day.
2. The beggar said that he was hungry and requested for some food.
3. She said that she wished she had a new pair of shoes.
- J. 1. won't you 2. won't he 3. haven't they 4. won't she
- K. 1. Aunt Polly was delighted because the fence had been painted spotlessly white.
2. The chief of the monkeys gave them permission to put bananas in their mouths but told them not to eat them.
3. Yes, because he was a honest and truthful boy.
4. When Mary Kom was small, she helped her parents by assisting them in the fields, while fishing and making charcoal.
5. Ravi wanted to make fun of Shravan in front of others because Ravi had been able to answer all the questions that morning while he himself could answer none. Moreover, Shravan was poor and Ravi was a rich boy.

GRAMMAR WORKSHEETS

Grammar Worksheet 1

- A. 1. I want to eat pizza.
2. I like to swim in the river.
3. Mother loves to play chess with me.

4. We want to sing a song for our teacher.
5. They like to read books.
6. I exercise to stay fit.
7. The teacher told us to make posters on water conservation.

- B. 1. Jumping 2. Collecting 3. flying 4. Watching 5. smoking 6. ruling
7. installing 8. Copying

Grammar Worksheet 2

- | | |
|--|----------------------|
| A. 1. <u>Why</u> are you angry? | Interrogative adverb |
| 2. The hall is <u>totally</u> full. | Adverb of degree |
| 3. We should have a bath <u>every day</u> . | Adverb of frequency |
| 4. <u>Where</u> did you keep the key? | Interrogative adverb |
| 5. He answered the question <u>almost</u> correctly. | Adverb of degree |

- B. 1. nearer 2. best 3. more wisely 4. fastest

Grammar Worksheet 3

- A. 1. Apples are sold by Shanta in the market.
2. Tickets were sold by the children at the gate.
3. A torn coat was worn by the poor man.
4. The fault will be repaired in the evening by the electrician.
5. A nest in the bushes has been built by the birds.
- B. 1. The cat spilt the milk.
2. The gardener watered the plants.
3. Rima's father gave her a car.
4. People welcomed the king.
5. The boys made the sandwiches.

Grammar Worksheet 4

- A. 1. Rohan said that he would play in the park with Binny.
2. Sumeet told that the thief ran away.
3. Avni told Sid that Murali was playing basketball.
4. Mini said that Raman eats an apple every day.
5. Mrs Mehra told the girls to stop writing then.
- B. 1. Rima said to her mother, "Can I go out to play?"
2. Anju said, "Mother is resting."
3. Mansi said to me, "I will meet you tomorrow."
4. Soha said, "Sadiq will go out."
5. Ramesh said, "Meena has eaten some porridge."

Grammar Worksheet 5

- A. 1. Shiraz asked Saba where her drawing book was.

2. Divya asked Hitesh who the new monitor was.
 3. Josephine asked Siddhi why everyone had been shouting.
 4. Father enquired when would Rita's exams begin.
 5. Tony asked who was making a noise.
- B.** 1. asked/was 2. enquired/was 3. asked/had been
- C.** 1. Thierry Henry is a great football player, isn't he?
2. Gary Sobers is the greatest all-rounder the world has known, isn't he?
3. It never snows in the plains of India, does it?
4. Winters are cold in north Japan, aren't they?
5. Grammar is great fun, isn't it?
6. Modern computers are very powerful, aren't they?
7. The Shatabdi Express is never late, isn't it?
8. Lazy people do not get much work done, do they?
- D.** 1. You are very late, aren't you?
2. Sonu sang well, didn't he?
3. He always speaks the truth, doesn't he?
4. They will win the match, won't they?
5. It is a very tasty dish, isn't it?

1. PERCENTAGE AND AVERAGE

ANSWERS

EXERCISE 1.1

A.	Fraction	Percentage
1. Pink	$\frac{7}{100}$	7%
2. Orange	$\frac{16}{100}$	16%
3. Purple	$\frac{11}{100}$	11%
4. Blue	$\frac{19}{100}$	19%
5. Green	$\frac{10}{100}$	10%
Unshaded square	$\frac{37}{100}$	37%

B. 1. 75% 2. 35% 3. 16% 4. 360% 5. 86% 6. $56\frac{2}{3}\%$ 7. 30% 8. 40% 9. $57\frac{1}{7}\%$
10. $43\frac{3}{4}\%$

C. 1. $\frac{1}{2}$ 2. $\frac{1}{5}$ 3. $\frac{2}{5}$ 4. $\frac{9}{10}$ 5. $\frac{13}{20}$ 6. $\frac{12}{25}$ 7. $\frac{1}{8}$ 8. $\frac{1}{3}$ 9. $\frac{1}{6}$ 10. $\frac{1}{16}$

D. 1. 65% 2. 75% 3. 90% 4. $87\frac{1}{2}\%$ 5. 40%

EXERCISE 1.2

A. 1. (e) (C) 2. (d) (A) 3. (a) (E) 4. (c) (B) 5. (b) (D)

B. 1. 60% 2. 38% 3. 9% 4. 24.5% 5. 120% 6. 250% 7. 1250% 8. 875%

C. 1. 0.4 2. 0.11 3. 0.05 4. 2.34 5. 0.042 6. 0.007 7. 0.825 8. 1.124

D. 1. ₹8 2. 3 kg 3. 37.5 m 4. 40 L 5. 4 items 6. 135

E. 1. 24 girls and 16 boys 2. 38 eggs 3. 5 questions 4. $55\frac{5}{9}\%$ 5. 60000 seats
6. 75% of ₹108

EXERCISE 1.3

A. 1. 4 2. 7 3. 5.6 4. 11.75 5. 32 6. 7.5

B. 1. 34.4 kg 2. 20 mm 3. 41°C 4. 140 cm 5. 500 mL 6. 19 marbles 7. 6 kg

HOTS (page 85)

₹1833.33

Value Corner (page 85)

₹20850

2. RATIO AND PROPORTION

ANSWERS

EXERCISE 2.1

- A. 1. 2:3 2. 3:7 3. 1:3 4. 2:5 5. 2:3 6. 5:9 7. 3:8 8. 4:11
B. 1. No 2. Yes, 2:5 3. Yes, 8:15 4. No 5. Yes, 5:1 6. Yes, 8:1 7. Yes, 1:100
8. Yes, 3:10 9. Yes, 4:3
C. 1. 2:4, 3:6, 4:8 2. 6:8, 9:12, 15:20 3. 2:3, 4:6, 6:9 4. 4:3, 8:6, 80:60
5. 3:4, 6:8, 15:20 6. 4:9, 8:18, 12:27 7. 2:5, 4:10, 12:30 8. 1:2, 2:4, 35:70
D. 2:7
E. 1. 3:2 2. 2:5 3. 5:4 4. 5:7
5. 2:9 6. 6:5 7. 1:3
F. 1. 3:1 2. 3:4 3. 4:1 G. 3:5
H. 1. (a) 3:2 (b) 1:5 2. (a) 3:4 (b) 4:5
(c) 3:5 (d) Yes, as $3:9 = 9:27$

EXERCISE 2.2

- A. 1. Yes 2. No 3. Yes 4. Yes 5. No 6. No
B. 1. 2:8::4:16 2. 6:9::8:12 3. 4:10::14:35 4. 3:5::6:10 5. 8:4::2:1
6. 15:45::9:27 C. 1. 24 2. 5 3. 21 4. 9 5. 2 6. 11 D. 1. 105 books 2. 64 shells
3. ₹4060, ₹48720 4. Kanta ₹160, Razia ₹200 5. Cauliflowers-3 kg, Cabbages-12 kg

EXERCISE 2.3

- A. 1. 900 g 2. 2 L 750 mL 3. 41 pages 4. ₹4 5. ₹250 6. ₹49.80
7. Second option, 10 chocolates for ₹70 8. 1300 words 9. 1 hour 40 minutes 10. 5 L
B. 1. 5 kg shine for ₹400 2. 4 toothbrushes for ₹125

HOTS (page 96)

1. 75 m, 35 m 2. 60 m, 80 m, 100 m 3. Razia

3. PROFIT/LOSS AND BILLS

ANSWERS

EXERCISE 3.1

- A. 1. Profit = ₹5 2. Loss = ₹18 3. Profit = ₹45 4. Profit = ₹135 5. Loss = ₹95 6. Loss = ₹700
 B. 1. ₹8 2. ₹30.50 3. ₹160 4. ₹750 5. ₹14900 6. ₹8950
 C. 1. ₹88 2. ₹230 3. ₹529.50 4. ₹5880 5. ₹950 6. ₹77340
 D. 1. Gain = ₹250 2. ₹39800 3. ₹3900 4. ₹94000 5. Loss = ₹300 6. Profit = ₹4600

EXERCISE 3.2

A.	C.P.	S.P.	Profit	Loss	Profit%/Loss%
1.	₹25	₹35	₹10	×	40%
2.	₹80	₹72	×	₹8	10%
3.	₹120	₹156	₹36	×	30%
4.	₹800	₹700	×	₹100	$12\frac{1}{2}\%$
5.	₹9000	₹8550	×	₹450	5%
6.	₹37500	₹50000	₹12500	×	$33\frac{1}{3}\%$

- B. 1. ₹8960 2. ₹5980 3. Profit = $11\frac{1}{9}\%$ 4. ₹29000 5. ₹103500 6. ₹1500 7. ₹14000
 8. ₹26000 9. ₹2576 10. Profit = ₹500, 20% 11. No profit or loss 12. ₹6.25/apple
 13. ₹24640

EXERCISE 3.3

A. NUPUR GARMENTS			
Bill No. 0786	Date 31.10.2017		
Particulars	Rate	Quantity	Amount
Trousers	₹110	2	₹220
Caps	₹75	4	₹300
Vests	₹82	3	₹246
		Total	₹766

- B. 1. Richwood Jeans = ₹990; Shirts = ₹1300; Shorts = ₹315; Total = ₹2605
 2. Notebooks = ₹ 564.00; Pens = ₹428.75; Pencils = ₹140.00; Geometry box ₹273.00,
 Total = ₹1405.75

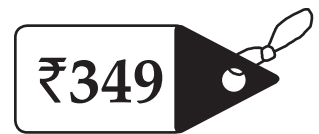
3. Moong dal = ₹320; Arhar dal = ₹252; Urad dal = ₹325; Basmati rice = ₹2400;
India Gate rice = ₹1400; Flour = ₹720; Vegetable oil = ₹1425; Total = ₹6842

C. 1. ₹180 2. ₹606 3. (a) ₹540 (b) ₹696

Fun Zone (page 105)

A. $₹ 6.00 + 2 \times 6.50 + 4 \times 2.50 = ₹29.00$

B. Total cost = $5 \times ₹190 + 8 \times ₹78 + 9 \times ₹325 + ₹83 = ₹4582$
 $₹7250 - ₹4582 = ₹2668$



4. SIMPLE INTEREST

ANSWERS

EXERCISE 4.1

- A. 1. S.I. = ₹180, A = ₹780 2. S.I. = ₹320, A = ₹1320 3. S.I. = ₹1687.50, A = ₹6187.50
4. S.I. = ₹4500, A = ₹16500 5. S.I. = ₹5625, A = ₹30625 6. S.I. = ₹25080, A = ₹73080
- B. 1. ₹800, ₹4000 2. ₹1600 3. ₹68000 4. ₹9150
5. Lata gets = ₹132, Mala gets = ₹135, Mala gets more interest by ₹3 6. S.I. = ₹18750, A = ₹93750
7. Interest = ₹144000, A = ₹744000 8. ₹919000 3. ₹319000

EXERCISE 4.2

- A. 1. ₹1000 2. ₹3000 3. ₹6000 4. ₹6000
- B. 1. 4 years 2. 5 years 3. 1 year 4. $\frac{1}{2}$ year
- C. 1. 10% 2. $12\frac{1}{2}\%$ 3. $4\frac{2}{3}\%$ 4. $1\frac{2}{3}\%$
- D. 1. ₹5000 2. 10% p.a. 3. $2\frac{1}{2}$ years 4. ₹600 5. $2\frac{31}{36}$ years

Puzzle (page 112)

1. Bank B, ₹60500 2. Bank A 3. ₹18000; ₹28125; ₹28800

PERIODIC TEST—3

- A. 1. False 2. True 3. True 4. True 4. False
- B. 1. (c) 2. (d) 3. (b) 4. (a) 4. (d)
- C. 1. (c) 2. (d) 3. (a) 4. (b)
- D. 1. VI 2. 9 3. Loss% 4. Amount
- E. 3 hours 45 minutes 6 seconds
- F. ₹ 5880 G. 41° C H. $\frac{1}{16}$ I. 512 cu. cm J. 5 years

5. METRIC MEASURES

ANSWERS

Let Us Recall

- A. 1. cm 2. mm 3. m 4. kg 5. g 6. mL
B. 1. 13.5 cm 2. 2.550 km 3. 4.255 kg 4. 0.005 L 5. 1.35 m

EXERCISE 5.1

- A. 1. 4 dam : 0.04 km = 0.4 hm = 40 m = 400 dm = 4000 cm = 40000 mm
2. 58 dg : 0.0058 kg = 0.058 hg = 0.58 dag = 5.8 g = 580 cg = 5800 mg
3. 248 mL : 0.000248 kL = 0.00248 hL = 0.0248 daL = 0.248 L = 2.48 dL = 24.8 cL
4. 3.17 kg : 31.7 hg = 317 dag = 3170 g = 31700 dg = 317000 cg = 3170000 mg
5. 0.025 m : 0.000025 km = 0.00025 hm = 0.0025 dam = 0.25 dm = 2.5 cm = 25 mm
6. 0.832 hL : 0.0832 kL = 8.32 daL = 83.2 L = 832 dL = 8320 cL = 83200 mL
7. 7513 cm : 0.07513 km = 0.7513 hm = 7.513 dam = 75.13 m = 751.3 dm = 75130 mm
- B. 1. 8597 g 2. 4782 mg 3. 17.824 km 4. 9.516 m 5. 30845 dL 6. 0.59105 kL
7. 0.40708 km 8. 60.539 g
- C. 1. 126 g, 0.25 kg, 5 hg, 70 dag 2. 86 mL, 2 L, 0.3 daL, 57 dL
3. 185 mm, 0.023 dam, 92 cm, 0.01 hm 4. 61 mm, 87 dm, 1 hm, 0.3 km

EXERCISE 5.2

- A. 1. 11 kL 9 hL 7 L 2. 2 dag 2 g 4 dg 6 cg 3 mg 3. 11 kg 7 hg 6 dag 4 dg
4. 1 hm 3 dam 9 m 1 dm 3 cm 6 mm
- B. 1. 87.370 km 2. 5519.4 g 3. 1955.75 L
- C. 1. 7 dm 3 cm 7 mm 2. 1 kg 6 hg 9 g 7 dg 3. 2 hL 8 daL 8 L 8 dL 5 cL
4. 2 km 3 hm 1 dam 5 m 8 dm 1 cm 1 mm
- D. 1. 266.067 g 2. 43.485 kL 3. 743.716 m
- E. 425 L
- F. Vashu and Krish

EXERCISE 5.3

- A. 1. 7 m 9 cm 6 mm 2. 1 dag 4 g 1 dg 8 cg 7 mg 3. 2 daL 4 L 1 dL 5 cL 6 mL
4. 7 km 7 hm 9 dam 2 m 5. 3 hg 6 g 4 dg 7 cg 7 mg 6. 1 kL 6 hL 6 daL 8 L 8 dL
- B. 1. 28.314 kg 2. 8.808 kL 3. 112.992 km 4. 133.924 m 5. 2857.26 L 6. 119.102 g
- C. 1. 1 m 3 dm 4 cm 6 mm 2. 144 dL 7 cL 4 mL 3. 1 kg 3 hg 9 dag 1 g
4. 8 hm 7 dam 9 m 5. 1 kL 3 hL 6 daL 1 L 6. 7 g 1 dg 9 cg
- D. 1. 3.781 L 2. 2.319 m 3. 0.795 kg 4. 23.3 hm 5. 1.174 g 6. 9.0035 kL

Value Corner (page 122)

- A. Total number of sticks = $2 \times 9 \div 1.5 \times 6 = 72$, so, 18 sticks are used for fencing each tree.
B. Do it yourself.

Fun Zone (page 123)

Hint: Same regions have equal value.

6. BASIC GEOMETRY

ANSWERS

Let Us Recall

A. 1. (c) (D) 2. (a) (C) 3. (d) (B) 4. (b) (A)

B. 1. S, W 2. T, V, R 3. P, Q, U

EXERCISE 6.1

A. 1. \overline{BC} and \overline{AC} 2. \overline{OC} , \overline{OB} and \overline{OA} 3. \overline{AB}

B. 1. Parallel 2. Intersecting 3. Intersecting 4. Intersecting
5. Parallel 6. Intersecting

C. 1. Vertex : S, Arms : SR and ST, Angle: $\angle RST$ or $\angle TSR$
2. Vertex : O, Arms : OP and OQ, Angle: $\angle QOP$ or $\angle POQ$
3. Vertices : A and E, Arms : AB, AD; EC, EB, Angle: $\angle BAD$; $\angle BEC$

D. 1. Three angles; $\angle QPR$, $\angle RPS$ and $\angle QPS$
2. Three angles; $\angle SOP$ or $\angle SOQ$, $\angle RPQ$ and $\angle RPO$
3. Six angles; $\angle IXJ$, $\angle JXK$, $\angle KXL$, $\angle IXK$, $\angle JXL$, $\angle IXL$

E. 1. Point 2. intersecting 3. parallel 4. three 5. vertex, arms

EXERCISE 6.2

A. 1. 40° 2. 90° 3. 110° 4. 40° 5. 120° 6. 270°

B. 1. Acute angle 2. Obtuse angle 3. Right angle 4. Zero angle
5. Straight angle 6. Reflex angle 7. Complete angle or full angle
8. Obtuse angle 9. Acute angle 10. Reflex angle

C. 1. 70° , acute angle 2. 90° , right angle 3. 120° , obtuse angle 4. 110° , obtuse angle
5. 40° , acute 6. 180° , straight angle

D. 1. 60° , acute angle 2. 90° , right angle 3. 120° , obtuse angle
4. 180° , straight angle 5. 150° , obtuse angle 6. 0° , zero angle

E. Do it yourself.

EXERCISE 6.3

A. 1. Yes 2. Yes 3. Yes 4. No 5. Yes 6. No 7. Yes 8. No

B. 1. No 2. Yes 3. Yes 4. Yes 5. Yes 6. No 7. No 8. Yes

C. 1. 40° 2. 10° 3. 0° 4. 45° 5. 90° 6. 35° 7. 85° 8. 27°

D. 1. 110° 2. 95° 3. 68° 4. 25° 5. 0° 6. 90° 7. 120° 8. 45°

E. Draw it yourself.

F. Do it yourself.

G. 1. False 2. False 3. True 4. True 5. False 6. True 7. False 8. True

Fun Zone (page 136)

A. 1. 90° 2. 180° 3. 45° 4. 135°

B. 1. East and West 2. South-East 3. East and North 4. North-West and South-West

7. POLYGONS AND CIRCLES

ANSWERS

EXERCISE 7.1

- A. Do it yourself.
- B. 1. Equilateral triangle, Acute-angled triangle 2. Isosceles triangle, Right-angled triangle
3. Scalene triangle, Obtuse-angled triangle 4. Right-angled triangle, Scalene triangle
5. Isosceles triangle, Acute-angled triangle 6. Isosceles triangle, Obtuse-angled triangle
- C. 1. (a) Scalene triangle (b) Isosceles triangle (c) Equilateral triangle
(d) Isosceles triangle (e) Scalene triangle (f) Scalene triangle
2. (a) Right-angled triangle (b) Acute-angled triangle (c) Obtuse-angled triangle
(d) Right-angled triangle (e) Acute-angled triangle (f) Obtuse-angled triangle
- D. 1 and 4 are regular polygons.
- E. 1. Do it yourself. 2. No

EXERCISE 7.2

- A. 1. Yes 2. No 3. Yes 4. No 5. No 6. No
- B. 1. 80° 2. 110° 3. 45° 4. 40°
- C. 1. Yes 2. No 3. No 4. Yes 5. No 6. Yes
- D. 1. 90° , Right-angled triangle 2. 105° , Obtuse-angled triangle; scalene triangle
3. $60^\circ, 60^\circ, 60^\circ$, Acute-angled triangle; Equilateral triangle 4. $90^\circ, 45^\circ, 45^\circ$; Isosceles triangle
- E. No, in that case third side will be 8 cm, but $2\text{ cm} + 8\text{ cm} = 10\text{ cm}$ is not possible in a triangle.

EXERCISE 7.3

- A. 1. Quadrilateral 2. AB, BC, CD and AD 3. $\angle ABC, \angle BCD, \angle CDA$ and $\angle DAC$
4. AC and BD, O 5. Adjacent 6. Opposite
- B. 1. Rhombus 2. Kite 3. Trapezium 4. Rectangle 5. Square 6. Parallelogram
- C. 1. 6; AEIH, ABFH, AEGD, CDHF, BCGE, CGIF
2. 3; DGIH, BFIE, ABCD
- D. Do it yourself.
- E. 1. Triangle 2. 4-sided 3. Parallelogram 4. Rhombus 5. Rectangle, adjacent
6. Trapezium 7. Kite 8. Diagonals

EXERCISE 7.4

- A. 1. Centre 2. Radius 3. Diameter 4. Minor arc 5. Major arc 6. Sector
- B. Do it yourself.
- C. 1. False 2. True 3. True 4. False 5. False 6. True 7. False
- D. 1. D, H, I, O 2. B, F, J 3. A, C, E, G

EXERCISE 7.5

- A. Do it yourself.
- B. Do it yourself.
- C. 1. 24 cm (approx.) 2. 42 cm (approx.) 3. 37.2 cm (approx.) 4. 36 cm (approx.)
5. 66 cm (approx.) 6. 39 cm (approx.)
- D. 1. 13 cm 2. 52 cm 3. 80 cm 4. 125 cm
- E. Do it yourself.
- F. 1. 171 m 2. 513 m

Puzzle (page 153)

- A. 96 cm B. 80 cm, 240 cm, 40 cm

Suggested Worksheet

- A. 1. Kite 2. Hexagon 3. Square 4. Right-angled triangle
- B. 1. 90° , Right-angled triangle 2. 70° , Acute-angled triangle 3. 100° , Obtuse-angled triangle
- C. Do it yourself.
- D. 1. (a) AD (b) CA, CB or CD (c) C 2. (a) PQ (b) \widehat{PXQ} and \widehat{PYQ} (c) PQXP

8. SYMMETRY, PATTERNS AND NETS

ANSWERS

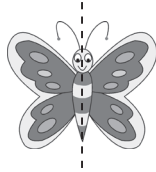
Let Us Recall

A. 1 and 2

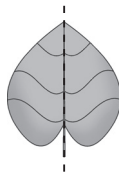
B. 1.



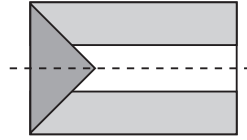
2.



3.



4.



Mental Test (page 154)

Right hand

EXERCISE 8.1

A. 1. A, B, C, D, E, K, M, T, U, V, W, Y

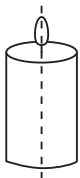
2. H, I, O, X

3. F, G, J, L, N, P, Q, R, S, Z

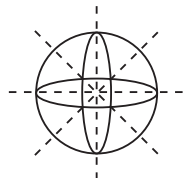
B. Yes; 0, 3, 8

C. Do it yourself.

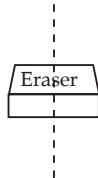
D. 1.



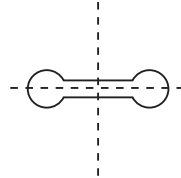
2.



3.



4.



E. 2 and 3

F. Do it yourself.

G. Do it yourself.

EXERCISE 8.2

A. 1. Full turn 2. $\frac{1}{2}$ turn 3. $\frac{1}{3}$ turn 4. $\frac{1}{4}$ turn 5. $\frac{1}{2}$ turn 6. $\frac{1}{4}$ turn 7. Full turn 8. $\frac{1}{3}$ turn

B. Do it yourself.

C. 1. H, I, N, O, S, X, Z; all these letters have 2 as order of symmetry 2. 0 and 8 3. 360

D. Six

EXERCISE 8.3

A. 1. 19 matchsticks, 15 matchsticks 2. 19 matchsticks, 31 matchsticks

B. 1. 55 2. 155 3. 395 4. 275

C. 1. 66, 120, 496 2. $144 = 66 + 78$, $256 = 120 + 136$, $900 = 435 + 465$ 3. 10 and 15

D. Yes, 36 can be shown through all the four given shapes.

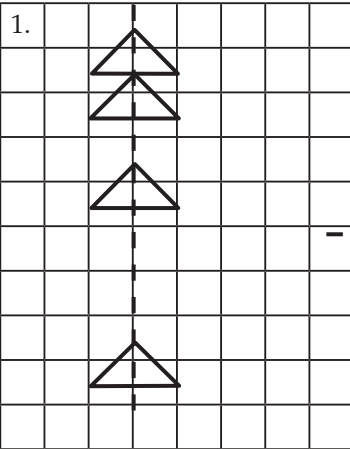
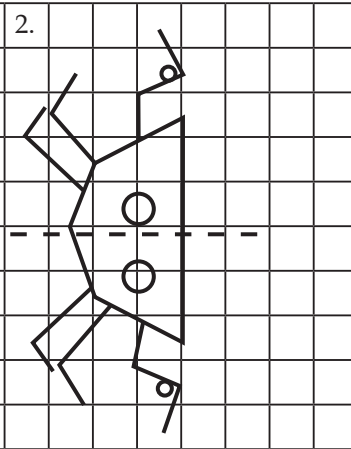
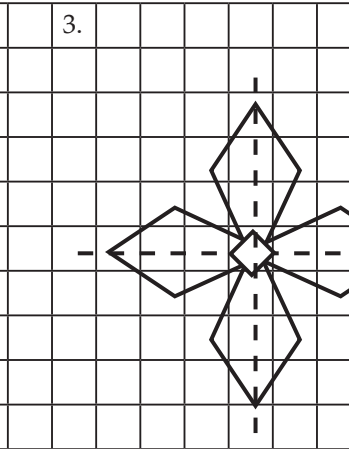
EXERCISE 8.4

A. 1, 3 and 5 can be folded in an open cube with five faces.

B. 1. (b) 2. (c) 3. (d) 4. (a)

C. Do it yourself.

Suggested Worksheet

A. 1.  2.  3. 

B. Do it yourself.

9. DATA HANDLING

ANSWERS

Let Us Recall

Amount	Tally marks	No. of students	Total collection
₹20		6	₹120
₹21		4	₹84
₹22		6	₹132
₹23		5	₹115
₹24		6	₹144
₹25		9	₹225
Total		36	₹820

₹180

EXERCISE 9.1

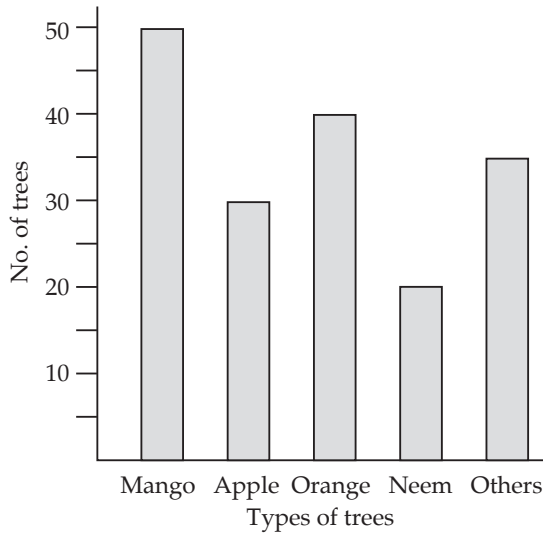
A. 1.

Class	Each ☺ stands for 5 students
I	☺☺☺☺☺☺☺
II	☺☺☺☺
III	☺☺☺☺☺
IV	☺☺☺
V	☺☺

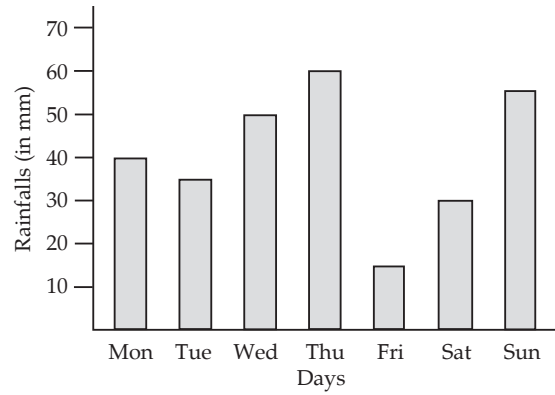
2.

Days	Each ☒ stands for 50 packets
Mon	☒☒☒☒☒
Tue	☒☒☒☒☒☒
Wed	☒☒☒☒
Thu	☒☒☒
Fri	☒☒
Sat	☒☒☒☒
Sun	☒☒☒☒☒☒☒

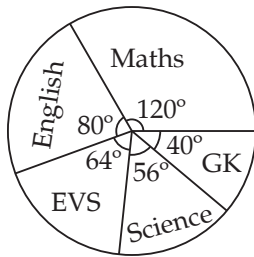
B. 1.



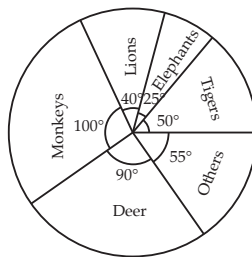
2.



C. 1.



2.



EXERCISE 9.2

A. Activity	Homework	Playing	School	TV	Sleeping	Others
Time	2 hours	2 hours	6 hours	1 hour	8 hours	5 hours

B. 1. Sanskrit 2. 12 students 3. 9 students

C. 1. Friday 2. Wednesday 3. 36°C 4. Thursday and Saturday 5. 43°C – 32°C = 11°C

D. 1. 38 people 2. 120 people 3. 82 people

Value Corner (page 175)

Code having	Tally marks	No. of letters
1 raised dot		1
2 raised dots	≡	5
3 raised dots	≡	9
4 raised dots	≡	9
5 raised dots		2







1. Draw bar graph yourself.

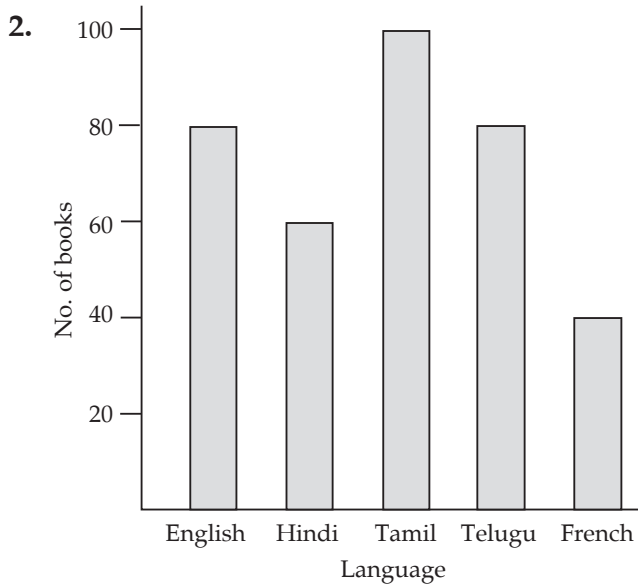
(a) 9 letters (b) either 3 or 4 raised dots (c) 4

MODEL TEST PAPER

- A. 1. (c) 2. (c) 3. (b) 4. (a) 5. (d) 6. (b)
- B. 1. False 2. False 3. True 4. False 5. True 6. True
- C. Perimeter = 240 cm, Area = 360 cm²
- D. 4 months, 3 weeks and 4 days
- E. 1. 13545252 2. $\frac{20}{3}$ 3. $\frac{3}{4}$ 4. 23.586 5. 20.28885
- F. 1. Square pyramid 2. Triangular prism
- G. 3
- H. 1. L% = $6\frac{1}{4}$ % 2. S.I. = ₹1600, A = ₹6600
- I. 1. 1 : 6 2. 40°, 50°, 90°
- J. (a) 60°, 150° (b) 0°, 90°
- K. 1. 2.7 cu m 2. 91 km 800 m
- L. 1. (a) 2 (b) 4 2. 71, 115, 186

M. 1.

Language	Each  represents 20 books	No. of books
English		80
Hindi		60
Tamil		100
Telugu		80
French		40



1. WONDERS OF AIR

ANSWERS

Warm Up

On blowing, air takes the space inside the balloon making it bigger in size.

Checkpoint 1

1. Atmosphere
2. respiration
3. bacteria
4. Air

Checkpoint 2

1. CNG
2. Bronchitis
3. Tree
4. Ozone

Check Your Study

- A. 1. (b) 2. (d) 3. (c) 4. (c)
- B. 1. 800 2. Oxygen 3. soil 4. pressure 5. barometer
- C. 1. False 2. False 3. False 4. True
- D. 1. Air is a mixture of 78 per cent nitrogen, 21 per cent oxygen, 0.03 per cent carbon dioxide, some water vapour and other gases.
2. Pitchkari, doctor's syringe and fountain pen work due to air pressure. Liquids flow from one container to other using siphon are also due to air pressure.
3. The presence of unwanted and harmful materials in air is called air pollution. Its main causes are smoke and harmful gases evolved due to burning of fossil fuels in automobiles and industries.
4. **Hint:** Refer to heading 'Effects of Air Pollution' and 'Controlling Air Pollution'.
- E. 1. Because CNG is a non-polluting fuel. It burns without giving smoke.
2. Because it gives good mileage, hence, less consumption of fuel that reduces air pollution.
3. Factories and industries are not allowed to establish in residential areas because harmful gases and other wastes released by them would cause ill-effects on the health of people living there.

2. MATTER

ANSWERS

Warm Up

Water is shown in solid state. Other states of water are liquid and gaseous states.

Checkpoint 1

1. matter
2. matter
3. solids
4. shape, volume

Checkpoint 2

1. Carbon dioxide
2. Nitrogen
3. Mixing salt into water
4. Burning petrol

Check Your Study

A. 1. (b) 2. (c) 3. (b)

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

C. 1. **Hint:** Refer to table, 'Features of Matter in three Different States'.

2. Compounds are the substances formed by the combination of different elements in a fixed ratio. Water and salt are two examples of compounds.

3. The substances made of only one kind of atoms are called elements such as gold, silver, iron, etc. The substances that are formed by the combination of different elements in fixed ratio are called compounds such as sugar, salt, water, etc., whereas mixtures are the substances that contain different elements or compounds or both in uncombined state and varying amount such as air, sea water, etc.

4. Cooking of rice is a chemical change because it is irreversible, i.e., we cannot get back raw rice.

5. Carbon dioxide, water vapour and carbon.

6. Physical changes are reversible changes without forming new products whereas chemical changes are irreversible changes that form new products.

D. **Elements:** Iron, carbon, gold, hydrogen

Compounds: Sugar, water, salt, baking soda

Mixtures: Air, soil, soda water, sea water

E. 1. Chemical changes are permanent changes because the composition and properties of the substance do not remain same and the new substances formed are completely different from the original one.

2. Solids have fixed volume and fixed shape because molecules in solids lie very close and strongly attracted towards each other.

3. Air is considered matter because it has weight and occupies space.

3. ROCKS AND MINERALS

ANSWERS

Warm Up

Diamond. It is used in making jewellery.

Checkpoint 1

1. Geology
2. crust
3. fire rocks

Checkpoint 2

1. Coal
2. metallic minerals
3. Natural gas
4. Gemstones

Check Your Study

A. 1. (a) 2. (b) 3. (c) 4. (d)

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

C. 1. The rocks formed by cooling of hot, molten magma are called igneous rocks.

These rocks are formed by cooling of either underground magma or its volcanic eruption as lava on the ground.

2. Metamorphic rocks are formed by the transformation of igneous and sedimentary rocks. These rocks are metamorphosed because of intense heat and pressure developed due to overlying layers.

3. (a) **Sandstone:** It is formed from grains of quartz and feldspar.

(b) **Limestone:** It is formed from calcite.

(c) **Conglomerate:** It is made of sand, pebbles, silica and calcium carbonate.

(d) **Gypsum:** It is made of sulphate minerals.

(e) **Shale:** It is made of clay.

4. The elements or compounds found in the earth's crust are called minerals. For example, gold, silver, etc.

5. Coal was formed by the decomposition of dead remains of plants that lived 400 million years ago and got buried in swamps.

D. **Igneous rocks:** Pumice, Obsidian, Granite

Sedimentary rocks: Limestone, Sandstone, Shale, Conglomerate, Gypsum

Metamorphic rocks: Gneiss, Marble, Slate

E. 1. This is because granite is hard and does not wear out easily.

2. Pumice stone is porous having air in them. This makes it very light and it float on water.

4. SOIL EROSION AND CONSERVATION

ANSWERS

Warm Up

Water

Checkpoint 1

1. rocks
2. soil erosion
3. deforestation

Checkpoint 2

1. Afforestation
2. Terrace farming
3. Soil conservation
4. Soil pollution

Check Your Study

A. 1. (a) 2. (b) 3. (b)

B. 1. rocks 2. soil erosion 3. vegetation 4. terrace farming 5. pesticides; chemical fertilisers

C. 1. Weathering is a process by which rocks are broken into fine particles by wind and water.

2. Soil is formed by weathering of rocks in which rocks are broken into fine particles by wind and water.

3. The removal of topsoil is called soil erosion. It is caused by strong winds, heavy rain and some human activities such as deforestation, overgrazing by farm animals, too much ploughing of farmland and leaving land bare after harvesting.

4. Protection of soil against its erosion is called soil conservation. It is important to save the land from losing its fertility.

5. Felling down the trees on a large scale for human use is called deforestation whereas growing plants on a large scale to prevent soil erosion is called afforestation.

6. Human activities like dumping wastes such as glass, plastics, polythenes, etc., on open land and excessive use of fertilisers and other chemicals by farmers are the major sources of soil pollution.

D. 1. Because dumping solid and non-biodegradable wastes on land causes soil pollution and makes the land barren.

2. Cattle should not be made to graze at the same place regularly because this would make the land loose and bare causing soil erosion.

PERIODIC TEST—3

A. 1. Geology 2. soil 3. non-metallic 4. afforestation
5. solid

B. 1. False 2. False 3. False 4. True 5. True

C. 1. (e) (Now 118) 2. (a) 3. (d) 4. (c) 5. (b)

D. 1. (c) 2. (b) 3. (b) 4. (c) 5. (c)

- E. 1. The rocks formed by cooling of hot, molten magma are called igneous rocks. These rocks are formed by cooling of either underground magma or its volcanic eruption as lava on the ground.
2. Weathering of rocks is a process of breaking of rocks into fine particles by wind and water.
 3. Compounds are the substances formed by the combination of different elements in a fixed ratio. Water and salt are two examples of compounds.
 4. Air is a mixture of 78 per cent nitrogen, 21 per cent oxygen, 0.03 per cent carbon dioxide, some water vapour and other gases.
 5. Chemical changes are permanent changes because the composition and properties of the substance do not remain same and the new substances formed are completely different from the original one.

5. FORCE AND SIMPLE MACHINES

ANSWERS

Warm Up

Knife

Checkpoint

1. force 2. three 3. changing 4. wedge

Check Your Study

A. 1. (b) 2. (d) 3. (b) 4. (a)

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

C. 1. A force is a pull or push applied on an object. A force can make an object move, stop a moving object, change the direction and slow down or speed up a moving object, and change the shape and size of an object.

2. An upward force in water that resists an object from going down and keeps it afloat is called buoyant force.

The force that acts between the two surfaces is called frictional force.

3. A sloping surface that reduces the effort required to lift a load is called an inclined plane. It is used as a ramp in hospitals, hotels, airports, etc., to drive the vehicles up, for loading and unloading heavy goods from trucks and on mountains, as slopy roads for vehicles to climb up easily.

4. Lever, pulley and inclined plane are major groups of simple machines.

5. The wheel and axle arrangement such as steering wheel in cars, handles of bicycles, door knob, an egg beater help us turn or move something across a surface more easily.

D. 1. Lifting a bucket of water out of a well with the help of a pulley becomes easier because the pulley changes the direction of applied force.

2. This is because the force of friction acts between the ball and ground which opposes the motion of the ball.

3. Swimming rings save from drowning because they increase the buoyant force.

6. THE UNIVERSE

ANSWERS

Warm Up

The Moon

Checkpoint 1

1. Venus 2. Moon 3. Great Dark Spot 4. Jupiter

Checkpoint 2

1. Yes 2. Yes 3. No 4. Yes

Check Your Study

A. 1. (c) 2. (d) 3. (a) 4. (b)

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

- C. 1. The different shapes of the moon seen on different nights are called phases of the moon.
2. An eclipse occurs when the light of the sun is blocked by the moon or the earth.
3. Tides are regular rise and fall of ocean water due to gravitational pull by moon on the earth. Low tides are formed when the ocean water on the side of the earth facing away from the moon rushes towards the moon-facing side of the earth. High tides occur when ocean water on the moon-facing side of the earth is attracted upwards.
4. **Hint:** Refer to headings 'Lunar Eclipse' and 'Solar Eclipse'.
5. **Hint:** Refer to figure under the head 'Solar Eclipse'.
- D. 1. **Hint:** Refer to planet, 'Earth' under the heading 'Planets of the Solar System'.
2. Because during a total solar eclipse, the moon covers the sun completely.
3. Because sound waves need air (medium) to travel and there is no air on the moon.

7. NATURAL DISASTERS

ANSWERS

Warm Up

Due to continuous heavy rain.

Checkpoint

1. No 2. Yes 3. Yes 4. Yes

Check Your Study

A. 1. (b) 2. (b) 3. (c) 4. (d)

B. 1. (d) 2. (e) 3. (b) 4. (c) 5. (a)

C. 1. An earthquake is the sudden shaking of ground due to vibrations deep inside the earth. It causes great damage to life and property.

The different ratings of an earthquake on the Richter scale indicate how destructive it is.

2. A volcano is an opening on the earth's surface through which hot and molten rocks, ash and gases erupt from inside the earth.

Mount Vesuvius, Mount Etna, Mount Erebus, Mount Fuji and Barren Island are some active volcanoes.

3. Tsunami causes a great loss of life and property in the coastal areas.

4. The condition of continuous heavy rains for many days, causing rivers to overflow and submerge nearby areas is called flood.

Deforestation and overgrazing are the main causes of floods.

5. A flood damages the crop fields, submerges many areas causing great loss to life and property as well as soil erosion.

6. A condition of less or no rains over a long period of time is called drought.

D. 1. Floods wash away the upper fertile layer of soil causing soil erosion.

2. Trees give out water vapour during transpiration and help in bringing rains.

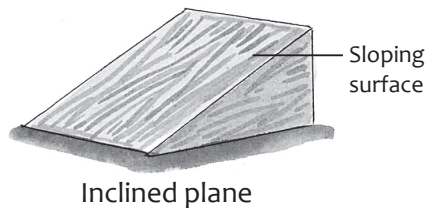
E.

B	U	M	A	D	R	O	U	G	H	T
V	O	R	N	S	T	X	M	W	F	S
E	A	R	T	H	Q	U	A	K	E	U
N	T	Q	C	N	O	R	G	L	G	N
T	D	Y	Y	P	E	J	M	X	P	A
L	Q	M	L	B	S	L	A	V	A	M
N	F	L	O	O	D	S	V	B	R	I
K	Z	U	J	I	T	A	H	W	A	Q
C	Y	C	L	O	N	E	R	A	P	H

MODEL TEST PAPER

- A. 1. Soil conservation 2. Jupiter 3. Reflex actions 4. Atom
5. Earth
- B. 1. (d) 2. (e) 3. (b) 4. (a) 5. (c)
- C. 1. Lever, pulley and inclined plane are major groups of simple machines.
2. Fats have twice the amount of energy as compared to carbohydrates. So, they provide more energy to do lots of physical activities.
3. First artificial satellite launched by India was Aryabhata and by Russia was Sputnik 1.
4. Pitchkari, doctor's syringe and fountain pen work due to air pressure. Liquids flow from one container to other using siphon are also due to air pressure.

D. 1.

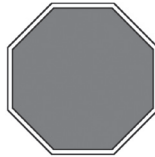


2. (a)



U-turn

(b)



Stop

- E. 1. Ozone 2. Egg beater 3. Lungs 4. Bone 5. X-ray
- F. 1. Moon 2. Hammer 3. cilia 4. sand 5. compound
- G. 1. An upward force in water that resists an object from going down and keeps it afloat is called buoyant force.
The force which acts between the two surfaces and opposes the motion of a moving object is called frictional force.
2. Skeletal system gives shape and support to the body, protects internal soft organs and provides movements to the body parts.
3. In case of snake bite, tie a tight bandage a little above the bitten area, do not allow the victim to sleep and take him to the doctor immediately.
4. In lunar eclipse, the earth comes between the sun and the moon such that the shadow of the earth falls on the moon, whereas in solar eclipse, the moon comes between the sun and the earth and casts its shadow on the earth.
- H. 1. The earth has life on it because of the following reasons:
(a) It is at the appropriate distance from the sun.
(b) Its atmosphere contains oxygen which is necessary for life.
(c) It has water on it.
2. The rolling ball stops itself because the force of friction acts between the ball and the ground which opposes the motion of the ball.
3. We cannot bend our knees and elbows backward because the joints found in them allow movement of bones in one direction only.

1. POLLUTION

ANSWERS

Warm Up

Hint: Radioactive substance—should stay away from the area.

Checkpoint

1. Smoke
2. air, water, soil, noise
3. Loud

Check Your Study

A. 1. (a) 2. (c)

B. 1. Forest 2. Railway station 3. Smoke from car 4. Sewage and chemical waste from factories

C. 1. We change the natural environment for our benefit.

2. Human activity makes the environment dirty. This is called pollution.

3. The causes of water pollution are:

- Throwing of harmful things into rivers, ponds and seas.
- Washing clothes on river banks.

4. We can stop noise pollution by not bursting firecrackers during festivals, not playing loud music, and not blowing horns unnecessarily.

5. We should keep the environment neat and clean in order to lead a healthy life.

D. **Hint:** Solar energy does not cause any pollution.

E. Do it yourself.

F. Do it yourself.

2. TRANSPORT AND COMMUNICATION

ANSWERS

Warm Up

Shanghai Maglev

Checkpoint

1. James Watt
2. The Romans
3. Mumbai
4. Subscriber's Trunk Dialling

Check Your Study

- A.** 1. (b) 2. (c) 3. (a) 4. (b)
- B.** 1. (c) 2. (d) 3. (a) 4. (b)
- C.** 1. Transport 2. Canal 3. Expressways 4. Advertisement
- D.** 1. The invention of the wheel changed the entire concept of transport because now the means of transport could move faster and in an easier way.
2. Heavy road traffic leads to pollution (air and noise). It also wastes time and people become stressful.
3. The steam engine made the movement of industrial goods easier. People could travel in trains run by steam engines. The invention of the steam engine gave a boost to the economy.
4. Mass communication helps us to reach a large number of people at the same time. Thus, important information can be communicated to a large number of people in a short time.
- During war or disasters, mass communication is a boon.
5. The Internet is an international computer network that is connected to other networks and computers of companies, universities, etc. It is very fast. E-mails can be sent through the Internet. It is useful as we can buy things online, gather information about any topic and contact a person sitting far from us.
- E.** Do it yourself.
- F.** Do it yourself.

3. A LONG AND HEALTHY LIFE

ANSWERS

Warm Up

First image.

Checkpoint

1. (×) 2. (✓) 3. (✓)

Check Your Study

- A. 1. (b) 2. (b) 3. (a) 4. (c) 5. (a)
- B. 1. 37°C 2. optical 3. Sushruta 4. bacteria 5. Italy
- C. 1. (f) 2. (a) 3. (b) 4. (c) 5. (d) 6. (e)
- D. 1. The new machines help to diagnose diseases in a more effective way. Thus, they play an important role in curing the disease.
2. A person who has cowpox will never catch smallpox.
3. We can make milk germ-free by pasteurising it. In pasteurisation, milk is boiled at a high temperature.
4. We can keep ourselves healthy and strong by keeping the environment clean, eating a balanced diet and exercising regularly.
- E. **Hint:** Mercury expands on heating and it does not stick to the wall of glass (thermometer).
- F. Do it yourself.
- G. 1. Walking
- H. He should wash his hands with soap before and after taking any food.

4. SOME PEOPLE NEVER DIE

ANSWERS

Warm Up

1. Nelson Mandela
2. Vinoba Bhave
3. M D Amte

Checkpoint

1. Saint Teresa of Calcutta.
2. Sanskrit.
3. Kalidasa.
4. Rabindranath Tagore.
5. Greek philosopher.

Check Your Study

- A. 1. (a) 2. (a) 3. (b) 4. (a)
B. 1. (b) 2. (a) 3. (d) 4. (e) 5. (c)
C. **Down:** 1. NAVARATNAS 5. PEACE

Across: 2. RAGHUVAMSHA 3. KNIGHTHOOD 4. RAGADEEPAK 6. LENIN

- D. 1. Sushruta is called the 'Father of plastic surgery'. He was an expert in removing stones from the kidneys and the bladder, treating fractures and performing eye operations to remove cataract. Charaka knew about the medicinal value of hundreds of plants and how they could be used to treat different diseases. Charaka lived about 2000 years ago. In his book 'Charaka Samhita', he described the diagnosis and treatment of many diseases. He described in detail the various stages through which food passes before being fully digested. He stressed on the importance of hygiene in the treatment of diseases. He also listed the responsibilities of a doctor and how the doctor should deal with his/her patients.
2. Kalidasa is considered the greatest Sanskrit poet and dramatist of India. He is called the 'Shakespeare of India'. He lived during the reign of King Chandragupta II of the Gupta Dynasty. Kalidasa's famous works include 'Abhijnanashakuntalam', 'Raghuvamsha', 'Kumarasambhava', 'Meghduta' and 'Ritusamhara'. Of these, the most famous is the play 'Abhijnanashakuntalam'. The play has been translated into many Indian and foreign languages.
3. St Teresa lived most of her life in Kolkata. She founded the Missionaries of Charity that runs hospitals, homes for poor, dispensaries and mobile clinics, orphanages and schools. The members of the Missionaries of Charity must adhere to the vow to give 'wholehearted free service to the poorest of the poor'.
4. Socrates was born in Greece about 2,500 years ago. He was a teacher and a philosopher. He strictly followed the path of truth. According to him, the source of true knowledge is thinking and reasoning. Socrates was against blind faith. He always worked in search of truth and goodness. He advised people to believe in honesty, freedom and frank thinking.
5. Abraham Lincoln joined politics and in 1860, he was elected the President of the USA. Lincoln legally banned slavery and freed the slaves. Some Southern States that supported slavery wanted to form a separate nation. There was a civil war between

the Northern and Southern States for four years. The Northern States won the war and Lincoln was able to keep the USA united.

6. Karl Marx was born in Germany in 1818. The Industrial Revolution influenced all the European countries. The owners of the factories used to force the workers to work for long hours to earn more profits. The workers were paid low wages and their condition was bad. The factory owners earned huge profits and became rich. Thus, there were rich and poor people. Over a period of time, the middle class also developed. The rich industrialists and big landlords were called the capitalists. Karl Marx wanted that society in place of individuals should be the owner of everything. Karl Marx and his friends supported the cause of the workers. He wrote two books, 'Communist Manifesto' and 'Das Kapital'.

E. Do it yourself.

F. Do it yourself.

G. (a)

PERIODIC TEST—3

A. 1. (a) 2. (c) 3. (a) 4. (c) 5. (b)

B. 1. Plateaus 2. cassava 3. Liquefied Petroleum Gas 4. communication

C. 1. False 2. True 3. True 4. True 5. False

D. 1. (c) 2. (e) 3. (a) 4. (b) 5. (d)

E. 1. We change the natural environment for our benefit.

2. The Internet is an international computer network that is connected to other networks and computers of companies, universities, etc. It is very fast. E-mails can be sent through the Internet. It is useful as we can buy things online, gather information about any topic and contact a person sitting far from us.

3. We can keep ourselves healthy and strong by keeping the environment clean, eating a balanced diet and exercising regularly.

4. When the distance between two given points on the ground is measured, it is called the ground distance. The distance between the same two points on the map measured along a straight line is called the map distance.

5. Parallels are drawn at an equal distance towards north and south of equator. Parallels are drawn at 1° intervals. Parallels are numbered 1°N and 1°S above and below the equator, respectively.

Meridians are drawn at an equal distance towards the east and west of the Prime Meridian. Meridians are drawn at 1° intervals. Meridians are numbered 1°E and 1°W of the Prime Meridian, respectively.

5. STRUGGLE FOR FREEDOM IN INDIA

ANSWERS

Warm Up

Second image (Queen Victoria)

Checkpoint

1. Portugal
2. farmers
3. Bahadur Shah Zafar II

Check Your Study

- A. 1. (b) 2. (a) 3. (b) 4. (a) and (c)
- B. 1. 16th 2. Indian 3. Bahadur Shah Zafar II 4. British exploitation 5. Bombay
- C. 1. Revolt 2. Nationalism 3. Casteism 4. Social reformer
- D. 1. Initially, the Europeans came to India to carry out trade and business. But, gradually they started taking control of the country.
2. The Revolt of 1857 was started by the Indian soldiers serving in the British army. The Indian soldiers were given less wages than the British soldiers. The Company rulers introduced the Enfield rifle in India. Greased cartridges were used in them. Before fitting them into the rifles, the soldiers had to bite the end of the cartridges with their teeth. A rumour spread that the cartridges were greased with the fat of the cow and the pig. This enraged both Hindus and Muslims as it was against their religious beliefs. The revolt began at Meerut near Delhi. Mangal Pandey was the first soldier who refused to use the Enfield rifles. He was arrested and later on hanged. Soon, the revolt spread like wildfire in many parts of Northern and Central India. The Indian farmers, weavers, craftsmen and workers supported and took part in the revolt against the British.
3. The failure of the Revolt of 1857 was mainly due to the following reasons:
- (i) The revolt did not spread to all parts of the country.
 - (ii) People from all sections of society did not support it.
 - (iii) The Indian soldiers did not have good weapons.
4. Indians realised that they were being treated as slaves in their own country by the British. This feeling led to the formation of various associations and institutions. The leaders talked to the people against the British Rule in India. The British wanted to make India poor and backward. This feeling united the Indians. The educated Indians spread nationalism in the country.
5. Indians wanted to put an end to the British rule in India. Indians from all walks of life supported the cause of freedom and joined the struggle to achieve it. They felt the need for a united group which could fight for the rights of people. This resulted in the formation of the Indian National Congress in 1885. A retired British officer, A.O. Hume, helped found the Indian National Congress. He wanted to develop a meaningful relationship between the Indian people and the British government through this organisation. The first meeting of the Indian National Congress was held in Bombay (now Mumbai), under the Presidentship of W.C. Bonnerjee.
- E. India would have attained freedom sooner and become a developed country by now.
- F. Do it yourself.

6. INDIA WINS FREEDOM

ANSWERS

Warm Up

1. (c) 2. (a) 3. (b)

Checkpoint

1. Gopal Krishna Gokhale.
2. Bipin Chandra Pal.
3. 1905.
4. A British commander.
5. Netaji Subhash Chandra Bose.

Check Your Study

- A. 1. (a) 2. (a) 3. (b)
- B. 1. Bal Gangadhar Tilak, Lala Lajpat Rai and Bipin Chandra Pal.
2. Aurobindo Ghosh, Veer Savarkar and Ajit Singh.
3. Khudiram Bose, Bhagat Singh, Ram Prasad Bismil, Sukhdev, Chandra Shekhar Azad and Sitaram Raju. (Any three)
- C. 1. During the Civil Disobedience Movement, Gandhiji asked the people to boycott foreign goods. This is known as the Swadeshi Movement. Khadi became the dress of Indian freedom fighters. This benefitted the Indian weavers.
2. In 1919, a meeting was held in Jallianwala Bagh in Amritsar to protest against the policies of the government. A British commander, General Dyer, along with his troops surrounded the place and ordered them to shoot and kill everybody. Thousands of men, women and children died on Baisakhi Day. This is known as the Jallianwala Bagh Massacre.
3. Subhash Chandra Bose was elected President of the Indian National Congress twice. He was arrested by the British Government. He escaped from prison and went to Japan via Afghanistan and Germany. He formed the Indian National Army and fought against the British. He gave the popular slogans 'Jai Hind' and 'Dilli Chalo'.
- D. 1. Some prominent leaders like Bal Gangadhar Tilak, Lala Lajpat Rai, Bipin Chandra Pal and many others wanted to oppose the British rulers strongly. They wanted strikes and boycotts. They were called the Radicals. The Radicals wanted every Indian to sacrifice in the struggle for freedom. Tilak once declared, "Swarajya is my birthright and I shall have it."
2. People in every part of India were very angry about the cruel attitude of British rulers. Gandhiji launched the Non-Cooperation Movement in 1920. Some people in Chauri Chaura set the police station on fire. Because of this violence, Gandhiji withdrew the Non-Cooperation Movement immediately.

3. During the Civil Disobedience Movement, Gandhiji led the Dandi March and broke the salt laws. He challenged the authority of the British.
 4. Subhash Chandra Bose was elected the President of the Indian National Congress twice. He was arrested by the British government. He escaped from prison and went to Japan via Afghanistan and Germany. He took the charge of the Indian National Army and fought against the British. He gave the popular slogans 'Jai Hind' and 'Dilli Chaló'.
- E. Hint:** To weaken the nationalism prevailing in Bengal.
- F.** Do it yourself.
- G.** (b)

7. GOVERNING OUR COUNTRY

ANSWERS

Warm Up

1. Ram Nath Kovind 2. Narendra Modi

Checkpoint

1. seven 2. whole country 3. Parliament 4. 545

Check Your Study

A. 1. (c) 2. (a) 3. (b) 4. (a) 5. (b)

B. 1. (d) 2. (a) 3. (b) 4. (c) 5. (e)

C. 1. Government 2. Constituencies 3. Elections 4. Governor 5. Supreme Court

D. 1. The Lok Sabha is the main law-making body in India.

2. The Union or the Central Government looks after the whole country. It makes laws of national importance such as defence of the country. Every person in our country, who is more than eighteen years of age, has the right to vote in electing the peoples' representatives to the Parliament. The political party, which has the largest number of MPs in the Lok Sabha, forms government.

3. The President of India is not elected by the people directly. The members of the Lok Sabha, the Rajya Sabha and the State Assemblies elect the President of India. The President is the head of the country and he/she is elected for five years.

4. The Constitution of India has provision for establishing an independent judicial system. The judicial bodies are called Courts. The highest judicial body of India is the Supreme Court of India. It is located in New Delhi. The judges of the Supreme Court are appointed by the President of India. The decision of the Supreme Court is final in all legal cases. The High Court is the highest judicial body in a State. At present, there are eighteen High Courts in India. Some High Courts look after the work of more than one State. Out of seven Union Territories, only Delhi has a High Court. Every district in the State has District Courts and Lower Courts in other towns and cities.

5. People of a state elect representatives to the Legislative Assembly. The political party, which has the largest number of MLAs in the Legislative Assembly, forms the government in the State.

E. Do it yourself.

F.

Country	Name of the Parliament
China	National People's Congress
Nepal	Constituent Assembly of Nepal
Bangladesh	Jatiyo Shangsad
England	House of Commons
USA	Congress
Russia	Duma

G. Do it yourself.

H. Do it yourself.

8. THE UNITED NATIONS

ANSWERS

Warm Up

Antonio Guterres

Checkpoint

1. After the First World War.
2. 24 October.
3. New York.
4. UNESCO.

Check Your Study

- A.** 1. (c) 2. (a) 3. (c) 4. (c) 5. (c) 6. (a)
- B.** 1. United Nations International Children's Emergency Fund
2. United Nations Educational, Scientific and Cultural Organisation
3. Food and Agriculture Organisation
- C.** 1. The General Assembly is the main organ of the United Nations. It is like a parliament. Every member nation has at least one representative in it. The General Assembly meets at least once in a year. Each member nation has the right of one vote in the General Assembly.
2. The Security Council works for international peace and security. It has five permanent members and ten temporary members. The permanent members are the USA, Russia, the UK, France and China. The term of every temporary member is only two years. These countries are elected by the members other than the permanent members.
3. United Nations International Children's Emergency Fund (UNICEF) looks after the welfare of children all over the world, especially for food, health, homes and education.
4. The World Health Organisation (WHO) works to improve the health of the people all over the world. It works to fight against diseases like malaria, tuberculosis, cancer, AIDS, bird flu, swine flu, etc.
- D.** 1. The death and destruction and sufferings of the First World War (1914–1918) and the fear of another such war shook the world with horror. Therefore, after the First World War, the League of Nations was formed to prevent war in the future.
2. The main aims and objectives of the United Nations are:
(i) to maintain peace and security among the nations of the world
(ii) to develop friendly relations among the nations of the world
(iii) to solve problems of nations in a peaceful and cooperative manner
(iv) to protect human rights and the freedom of people based on race, religion, language and sex
(v) to help nations in achieving the above aims and objectives
3. The United Nations works through several agencies. There are many agencies working to achieve the aims and objectives of the United Nations. Some of them are:
(i) United Nations International Children's Emergency Fund (UNICEF)
(ii) United Nations Educational, Scientific and Cultural Organisation (UNESCO)
(iii) World Health Organisation (WHO)
(iv) Food and Agriculture Organisation (FAO)
(v) International Labour Organisation (ILO)
4. The UN has been successful in maintaining peace in the world to a great extent. It has prevented disputes from growing into major wars. The wars in Korea, Vietnam, Palestine, Iraq and Iran were not allowed to spread to other parts of the world. The United Nations was successful in helping the developing countries in their fight against poverty, diseases and illiteracy. It has been able to prevent the use of destructive weapons. The United Nations has made the world a better place to live and work.

5. The General Assembly is the main organ of the UN and is like a parliament. Every member nation has at least one representative in it. The General Assembly meets at least once in a year. Each member nation has the right of one vote in the General Assembly.
- E. Do it yourself.
- F. **Hint:** visit → www.who.int/countries/ind/en/
- G. Do it yourself.
- H. (b)

MODEL TEST PAPER

- A. 1. (a) 2. (a) 3. (b) 4. (a) and (c) 5. (a)
- B. 1. six 2. The Secretariat 3. 1942 4. divide and rule 5. Stethoscope
- C. 1. False 2. True 3. True 4. True 5. False
- D. 1. (b) 2. (e) 3. (a) 4. (c) 5. (d)
- E. 1. Garbage/industrial chemicals thrown into natural water source
2. 'Raghuvamsha'
3. Gopal Krishna Gokhale
4. Bal Gangadhar Tilak
5. Introduction of the Enfield rifle.
- F. Do it yourself.
- G. 1. Recently, it has been noticed that the mean temperature of the Earth and of the atmosphere is increasing due to the greenhouse effect, which is causing global warming. The main greenhouse gases are carbon dioxide, methane and CFCs (chlorofluorocarbons). The increase of greenhouse gases in the atmosphere is due to pollution, which is caused by nature and human activity.
Carbon dioxide is added to the atmosphere by the burning of wood, coal and petroleum. It is also added by vehicles and industries. Methane gas is added to the atmosphere by the digestive system of herbivores, such as cows, horses, goats and sheep. CFCs are released from perfume and deodorant sprays. CFCs are also used in refrigerators.
2. The steam engine made the movement of industrial goods easier. People could travel in trains run by steam engines. The invention of the steam engine gave a boost to the economy.
3. The new machines help to diagnose diseases in a more effective way. Thus, they play an important role in curing the disease.
4. The Revolt of 1857 is considered the First War of Independence of India. It shook the foundations of British rule in India. The British, who had the support of many Indian kings and nawabs, were able to suppress the revolt. Many Indian villages were burnt. Thousands of Indians were either killed or arrested.
5. The Union or the Central Government looks after the whole country. It makes laws of national importance, such as defence of the country. Every person in our country, who is more than eighteen years of age, has the right to vote in electing the peoples' representatives to the Parliament. The political party, which has the largest number of MPs in the Lok Sabha, forms government.
- H. 1. Mecca 2. Suez Canal 3. Alexander Graham Bell 4. Louis Pasteur
5. Rashtrapati Bhawan