English–7

The Sentence

A. 1. You see this evening.
2. Close the wardrobe.
3. I told him not to go.
4. Do not make a lot of noise.
B. 1. Negative, **2.** Exclamatory, **3.** Exclamatory, **4.** Exclamatory, **5.** Interrogative, **6.** Affirmative, **7.** Affirmative, **8.** Affirmative, **9.** Imperative, **10.** Imperative
C. 1. Do I not work at a bank?
2. Does Kareena not sell flowers to make a living?
3. Does Martin not live on this street?
4. Does Shyam not help his sister with her homework?
5. Does Gautam not develop apps for smartphones?
6. Does Kailash not go to school on foot?

The Noun

A. 1. Barber, **2.** Nurse, **3.** Chemist, **4.** Baker, **5.** Doctor, **6.** Carpenter, **7.** Conductor, **8.** Farmer
B. 1. bunch, **2.** set, **3.** school, **4.** hive, **5.** pack
C. 1. heroine, **2.** lass, **3.** spinster, **4.** mare, **5.** baroness

The Adjective

A.

ADJECTIVES	OPPOSITES	ADJECTIVES	OPPOSITES
careful	careless	healthy	unhealthy
shy	bold	fat	slim
lazy	hardworking	smart	stupid
friendly	unfriendly	old	young
special	ordinary	funny	serious
polite	impolite	strong	weak
happy	sad	rich	poor
tall	short	empty	full

B. 1. healthy, **2.** hardworking, **3.** smart, **4.** tall, **5.** timid, **6.** rich, **7.** slim, **8.** polite, **9.** special, **10.** funny, **11.** strong, **12.** careful, **13.** friendly, **14.** happy, **15.** special

Worksheet-4

The Determiners

A. 1. The, **2.** The, the, the, **3.** an, the, **4.** the, **5.** a, a, **6.** The, the
B. 1. These, **2.** Those, **3.** This, **4.** That, **5.** this, **6.** that
C. 1. Some, **2.** any, some; **3.** any, **4.** some, **5.** some, any, **6.** some, **7.** some, **8.** any, some

Worksheet-5

The Pronoun

A. 1. it, **2.** it, **3.** they, **4.** it, **5.** he, **6.** her.
B. 1. which, **2.** that, **3.** who, **4.** who, **5.** that, **6.** who, **7.** who, **8.** whose, **9.** who, **10.** who, **11.** who, **12.** who, **13.** which
C. 1. Subhash and I are friends.
   2. Your problem is bigger than me.
   3. None of we went.

Worksheet-6

The Verb

A. (a) looted, (b) killed, (c) occurred, (d) entering, (e) woke, (f) call, (g) was attacked, (h) fell
B. 1. have, **2.** are, **3.** likes, **4.** is, **5.** is, **6.** has, **7.** was, **8.** leader, has, **9.** is, **10.** was

Worksheet-7

Subject-Verb Agreement

A. 1. entered, was teaching, **2.** came, was studying, **3.** was sweeping, saw, **4.** were playing, started, **5.** was running, failed
B. 1. Birds fly in the air.
   2. You do not tell a lie.
   3. Postman brings letter daily.
   4. He likes catching butterflies.
   5. Neena does not write well.
C. 1. will have finished, **2.** will have taken, **3.** will have done, **4.** will have saved, **5.** will have built

Worksheet-8

Modals

A. 1. must, **2.** have to, **3.** must, **4.** should, **5.** would, **6.** should, **7.** must, **8.** dare, **9.** could, **10.** used to

B. 1. may, **2.** can, **3.** can, **4.** may, **5.** may, **6.** will, **7.** will, **8.** might, **9.** may, **10.** might

Worksheet-9

Non-Finites

A. 1.	I want water <u>to drink.</u>	infinitive
2.	<u>Singing</u> is his favourite pastime.	gerund
3.	I am sorry <u>to hear</u> this.	infinitive
4.	We drank the <u>sparkling</u> water.	gerund
5.	She was depressed <u>to hear</u> the news.	infinitive
6.	<u>Trespassing</u> is prohibited.	gerund
7.	<u>Following</u> his father's footsteps, he became an advocate.	gerund
8.	A <u>rolling</u> stone gathers no moss.	gerund
9.	Would it be easy for you <u>to call</u> me tomorrow?	infinitive
10.	I will be happy <u>to help</u> you.	infinitive

B. (a) to fetch, (b) wagging, (c) to pamper, (d) barking, (e) licking, (f) to eat

C. 1. to come, **2.** to leave, **3.** to take, **4.** to go, **5.** to bring, **6.** to stay, **7.** to learn, **8.** to give

Worksheet-10

Active and Passive Voice

A. 1. was made, **2.** made, **3.** shot, **4.** was shot, **5.** was declared, **6.** won, **7.** was, checked, **8.** was proved, **9.** was, caught, **10.** Did, rob

B. 1. The flowers are being plucked by her.
2. The clothes are being washed by her.
3. A car is being driven by him.
4. Are the apples being eaten by you?
5. A book is being read by me.
6. Tea will be taken by me.
7. You will be punished by the teacher.
8. My books will not be stolen by him.
9. A kite will be flown by him.
10. The food will be cooked by her.

Worksheet-11

Direct and Indirect Speech

A. (a) what she could, (b) tell, (c) she could, (d) it should, (e) which colour, (f) would prefer, (g) take it the next day

B. 1. The teacher said, ''India became independent in 1947.''

    2. I said to him, ''Are you in your senses?''

    3. The old said to her, ''Obey your elders.''

    4. She said, ''She is ruined.''

    5. He said to me, ''You should go for a picnic.''

Worksheet-12

The Preposition

A. 1. for, of, from, for, with, of   **2.** in, in, in, for

B. 1. under, **2.** below, **3.** under, **4.** over, **5.** among, **6.** under, **7.** since, **8.** after, **9.** between

C. 1. He hit me with a stick.   **2.** Many people died of cholera.

    3. I need a pen to write with.   **4.** This paper is inferior to that.

    5. He is going towards home.

Worksheet-13

The Conjunction

A. 1. but, **2.** and, **3.** but, **4.** but, **5.** and, **6.** Neither, **7.** Not only, **8.** and, **9.** either, **10.** either, **11.** also

B. 1. Unless the assistant should apologise in writing he will be dismissed.

    2. Although Sonal was down with jaundice before the examination, she passed with 85% marks.

    3. Though it was a very expensive dress, she immediately decided to buy it.

    4. Unless your doctor recommends this medicine only then take it.

    5. Only if principal should recommend your case then you will get this scholarship.

    6. He won the match quite easily even though he had been out of practice for quite a long time.

Worksheet-14

The Adverb

A. 1. now / forever — speak, **2.** thoughtfully – assigned, **3.** early – arrive, **4.** well – did, miserably – failed, **5.** very – put, **6.** unusually – fast, **7.** extremely – fast, **8.** quite – look, **9.** surprisingly – tall, **10.** very – rarely, **11.** quite – often, **12.** ordinarily – think.

B. 1. slow, slowly; **2.** careful, carefully; **3.** angry, angrily; **4.** excellently, excellent; **5.** easily, easy; **6.** good, good; **7.** awfully, awful; **8.** carefully, wonderful.

Worksheet-15

Phrases

A. 1. of great wealth, **2.** an old man of friendly disposition, **3.** a tribe dwelling in the hills, **4.** with red hair, **5.** with plenty of money, of such beauty and power, **6.** of great promise, **7.** made of gold, **8.** with great speed, **9.** in all places, **10.** in a very rude manner, **11.** without any worries

B. 1. in a few words   –   briefly

  2. without doubt an   –   undoubtedly

  3. in former times   –   formerly

  4. with caution   –   cautiously

  5. in all probability   –   probably

Worksheet-16

Clauses

A. 1. clause, **2.** phrase, **3.** clause, **4.** phrase, **5.** phrase, **6.** clause, **7.** phrase, **8.** clause

B. 1. Dependent, **2.** Independent, **3.** Independent, **4.** Independent, **5.** Dependent

C. 1. is well-written, **2.** in the dog park today, **3.** was in my fruit tree, **4.** tonight for dinner, **5.** for the rest of this week, **6.** is very skittish, **7.** on his rice, **8.** across the street

Worksheet-17

Simple, Compound and Complex Sentences

A. 1. simple, **2.** simple, **3.** simple, **4.** compound, **5.** simple, **6.** simple, **7.** compound, **8.** complex, **9.** compound, **10.** complex sentence

B. 1. The baby called for food.

  2. Alex likes to fish, but he is going fishing on Sunday.

  3. The president chose people who would help him make good decisions.

C. 1. All the items that they required are available in the store.

  2. The dresses which appear to be quite cheap are there.

D. 1. We must eat to live.

  2. He must not be late to be allowed to enter.

Worksheet-18

Conditional Sentences

A. **1.** If Jane eats too much chocolates she gets sick.

    2. If you do not eat, you die.

    3. When you heat ice it melts.

B. **1.** do not study, will fail, **2.** will lend, need, **3.** am late, will call

C. **1.** left, could travel, **2.** were, might lend, **3.** would be, stopped

D. **2.** had't fallen, would have crashed, **3. 4.** wouldn't have lost, hadn't been. **5. , 6.** had, could have gone

E. **1.** were, **2.** have got, **3.** freezes, **4.** will regret, **5.** would not have hit, **6.** had been

Worksheet-19

Dialogue Writing

You   :   Father, next weak movie Sanju is releasing.

Father :   Then!

You   :   I want to watch it.

Father :   Why, is there anything special in it?

You   :   Yes father. I've seen its trailer many times. Its main character is Sanjay Dutt and it is cell about controlling one self from drugs.

Father :   Oh! Oh! That movie in which Paresh Rawal is playing the role of Sanjay Dutt's father.

Son   :   Yes Pop!

Father :   Why, do you want to watch this film?

Son   :   Father, in this movie I like Paresh Rawal's dialogue that is (*Mera beta koi gujra hua waqt nhi h ki joh laut kr vaapas nhi aa sakta.*)

Father :   Ok. I shall take you to the theatre next weak. But on certain conditions.

Son   :   I agree to all your conditions, Papa.

Father :   First get prepared for your half yearly examinations fast. They are going to be started in the last week of this month. Next Sunday I will make you watch this movie. It's my promise. Ok.

Worksheet-20

Debate Writing

1. If a child had a mobile phone, they would be most likely to be constantly on it, texting, playing games, sending pictures, etc. Many accidents that have happened, have been because of mobile phones. Car accidents : the majority of car accidents have been caused by people answering texts and losing control on the car, therefore crashing.

Also, if you were walking in the street, staring at your phone, Being addicted to your phone may cause you walk into someone or something, hurting you or someone else.

2. Cyber bullying is a huge problem. If a child gets cyber bullied, they will worry about it so much that they will start falling apart (not literally!) Mobile phones can be extremely dangerous and unsafe. Another thing linking with cyber bullying is hacking and viruses. Pop up ads are so dangerous. By clicking on a link, you may be letting a hacker or a virus into your phone. Remember, if it looks too good to be true, it probably is. Go with your gut feeling.

3. When children get a phone, a part of them turns silly. Basically talking, they might post something crazy or inappropriate. You need to be responsible.

I think that children should have a mobile phone but you should have to be 13 years old. It also really depends on trust from your parents.

Worksheet-21

Words that Often Confuse

A. 1. There, their; **2.** (i) heel, heal; (ii) heal, heel; **3.** (i) hear, here; (ii) hear, here; **4.** (i) check, cheque; (ii) cheque, check; **5.** (i) sour, sore; (ii) sore, sour

B. 1. We go to school five days a week.
  2. Our principal follows strict discipline.
  3. Don't wait for me for more than ten minutes.
  4. Yesterday we read the last lesson of the book.
  5. Do not waste neither time nor money.
  6. The ball broke the window pane and fell into the drawing room.
  7. Tea is grown in Assam.

C. 1. accept, **2.** effect, **3.** canvas, **4.** compliment

Worksheet-22

Bio-Sketch

Pratibha Devi Singh Patil, the 12th President of India and the first woman to hold the office, was born on December 19, 1934, at Nadgaon village in Maharashtra's Jalgaon district. After completing her basic education, she secured a Master's degree in Political Science and Economics from Jalgaon and a law degree from Mumbai.

She practiced law at the Jalgaon District Court.

She married Devi Sing Ran Singh Shekhawat on July 7, 1965. Patil was elected to the Maharashtra Legislative Assembly on a Congress ticket in 1962 and consistently won the state elections between 1967 and 1985. She became a Rajya Sabha member in 1985 and was elected to the Lok Sabha in the 1991 general elections from Amravati Constituency.

On November 8, 2004, Patil became the Governor of Rajasthan, the first woman to occupy this post.

Three years later she emerged as a compromise candidate for President and her name was announced by the Congress-led United Progressive Alliance on June 14, 2007. She won the election that was held on July 19. Her challenger was the then Vice-President Bhairon Singh Shekhawat, backed by the opposition National Democratic Alliance.

According to a BBC profile, Patil ''was by no means a unanimous choice for the role.'' But her long association with the Gandhi family made the ''low-profile governor'' of Rajasthan the ''favoured presidential candidate of Sonia Gandhi.''

Patil defeated Shekhawat by a margin of over 3 lakh votes, securing nearly 66 per cent of the total votes cast.

The Hindu wrote : ''Reflecting the UPA-Left's national spread... Patil made her presence felt in every State, whereas... Shekhawat drew a blank in West Bengal, Kerala, Tripura and Mizoram. He secured healthy margins in Gujarat, Madhya Pradesh and Rajasthan.''

She was sworn in as President on July 25, 2007.

In an article on the newly-elected President Outlook magazine wrote : ''Pratibha Patil not only has to be a 'people's president'— she needs to come up to the expectations of the women of this country.

Worksheet-23

Comprehension

B. **1.** day – play, flew – knew

2. wind

3. because the snow laid a coverlet over their heads.

4. Changing seasons (the leaves start to fell is Authmn)

5. Personification

Worksheet-24

Paragraph Writing

A. **1.** **Rainy Season**

I like the rainy season most. It is also known as monsoon season. It is my favourite and best season among all four seasons. Rainy season starts in India in the month of June when winds of South West Monsoon starts blowing. Monsoon begins in the middle of June, and continues up to September. According to Hindu Calendar this season is felt in the months of Asaadha and Shravana. During the season, the sky is generally overcast with cloud. The clouds of different shades move in the sky and look very nice. Sometimes, rain comes along with lightning and thunder. The Rainy season comes after the Summer season, so, this season brings relief to the burning earth scorched in the summer heat. The temperature remains pleasant during the monsoon. All the living things enjoy the rainy season by getting wet into the rainwater.

2. **Independence Day**

15th August is our Independence Day. On this day we won our freedom from foreign rule. It is celebrated in every village, town and city of India. But the main function is held at the Red Fort in Delhi where the Prime Minister hoists the National Flag. He delivers a speech emphasizing the importance of national unity and integrity of India. He reminds the people of the great sacrifices made by the Indian leaders to achieve independence. It is a day of national holiday. Celebrations are also held in the state capitals. The governor of some other state dignitary unfurls the national flag. Our school also celebrates this occasion. It reminds us of the martyrs. It reminds us of the responsibility we owe to the nation.

3. **Importance of Education**

Education helps widen a person's mental and intellectual capacity. Any process or activity that serves this purpose, therefore, is part of education. While there is a formal system of education, there is also an informal system of education. The formal system of education consists of the academic and scholastic learning imparted at formal schools and institutions of higher learning through teachers. It has a structured and organized set-up of syllabus and evaluation system through examinations. The informal system includes learning and study through various alternative means that includes books, and self-learning through experience and experimentation, besides interaction with scholars and experts in particular fields. One can also engage in both the formal and informal systems of education. It helps not only in the development of an individual, but through a cumulative effect it promotes the favourable growth and progress of the community, the entire society, and the nation as a whole. Education and intellectual growth of the people helps in creating broad-mindedness in them. This helps in solving almost all social ills that plague a backward society. Similarly, education is the solution for economic empowerment of the people. This helps in the emancipation of women and socially backward communities.

Worksheet-25

Message Writing

A. 15th Feb, 3 : 30 PM

Meenu

Mini called you. She has cancelled her birthday party as her grandmother fell down and broke her bones. She is admitted in the hospital. Call her.

B. 15th March 3 : 40 PM.

Renu

Ruhaan called up to say that there is a book reading session this evening at 8 pm at Oxford Bookshare. He will pick you up at 6 : 30.

Manu

Notice Writing

A. FOREST DEPARTMENT OF UTTARAKHAND

NOTICE

August 04, 20XX

Attention

Ill-effects of Hunting

Hunting has been chosen as an activity or sort by the Indians since eye. The ill effects of hunting are destructive. Hunting causes to the destruction of ecosystem and in increase in the population of a particular species. It is punishable act to the hunters. So please try to stop to hunt animals for fun or for accumulating wealth at the cost of animals' life.

Thank you

Ankit/ Anita

An official worker

Letter Writing

To

The Deputy Commissioner,

District Kanpur

Subject : Laying out a park for children.

Sir,

I, on behalf of the people living in the city, request you to provide a park for the children of this city. I hope you will fulfill this long-felt demand.

It is an old town with changing conditions of life. New towns are coming up on new lines. This town remains old fashioned as it does not enjoy modern amenities of life. Children have no place to go to walk or play and so they are playing in narrow city lanes and roads. This obstructs traffic and sometimes leads to accidents.

Childhood is said to be the formative period in the life of a person. Children are the future citizens of the country. They should be allowed to develop both physically and mentally power. It is, therefore, necessary that they get a proper climate and environment for their growth.

It is requested that a park for children may be provided. There is a large piece of land lying vacant near the District Library. It can be acquired for this purpose. It will fulfill the need of the children of this city.

You will earn the gratitude of the people if early steps are taken for providing a park for children,

Yours faithfully,
Vanita Kapila
August 20, 20xx

Worksheet-28

Story Writing

A. There is a well-known saying : "If wealth is lost, nothing is lost. If health is lost, something is lost. If character is lost, everything is lost." It can be reasonable believed that no person in a sound mind would like to lose something even.

A healthy man can work hard and earn wealth, whereas an unhealthy man can't do this. Moreover, it is said and that rightly so, that "a sound mind lives only in a sound body." In the modern world brain is everything to get all that man desires, but health is a prerequisite for having a good brain.

A student who works hard throughout the year has to bring out his knowledge on the paper on the day of examination. But if he does not enjoy good health, he may fall ill on the day of examination and thus all labour done by him the whole year may just go down the drain. In normal cause, even to pursue one's studies in a sustained manner may not be possible for one who doesn't enjoy good health.

It is for this reason that it is said that students and all young people should take part in sports and games and have regular walks and exercises on daily basis.

Those people who run after money excessively and lose their health, are no gainers in any way. A man having a lot of money, may not even be able to enjoy the fruits of his labour because death and disease can overpower him any time. So, the first and foremost thing for us is to take care of our health. Wealth-earning and other motives must take only a secondary place in our scheme of things.

B. Gaurav was a fourth grade student. He was a good boy, always smiling and did well in his studies. However, he had one bad habit. He would never wake up early in the morning. Due to this, he was always on his toes in the morning. Bathing, getting dressed, eating breakfast was all done at a maddening pace. His parents always advised him to be more disciplined, but, it all fell on deaf ears.

One day, as usual Gaurav was getting ready for school. He ran out of his room. His father saw him and asked him to slow down and eat his breakfast. Gaurav replied that he had no time. He picked up a sandwich and rushed out. His father just smiled.

Gaurav managed to reach school just in time. He was surprised to find the school deserted. He wandered in and found the principal. The principal seeing him asked, ''How come you are here at school? Didn't you know it's a strike? Anyway, it is good that you are here, now you can help me with my work.'' Gaurav's heart sank. He had no idea what to do. The only solution was to finish the principal's work fast and go home. Alas, he was wrong. The principal first made him write down the names of all the students in the fifth grade in the register book. Then he made him go to each classroom to keep dusters and chalks. All of this took up almost half the day. Gaurav was famished. After finishing all the tasks, the

principal gave him permission to leave. Gaurav decided to eat his lunch. He realized, in his hurry he had forgotten to carry lunch box. He started his journey back home. He was waiting for the bus when a passerby reminded him that the transport services were stalled due to the strike. He had to walk for 5 kms.

Ultimately Gaurav reached home tired and hungry. He saw his Dad and asked him if he too went to the office and returned home. His father replied, ''You knew it was a strike and you still did not stop me from going to school?'' His father replied, ''How could I tell you, you were in such a hurry.'' Gaurav realized his mistake. he apologized to his parents and swore to be more disciplined in future, because ''Discipline is the secret to a fruitful life.''

Worksheet-29

Factual Description

A. My New Mobile Phone

Last evening I was elated beyond limits as I was gifted a mobile phone by my father in a response to my long standing request. I had asked him many times to buy me either a laptop or a mobile phone. It is very beautiful and sleek. The Samsung Galaxy J 7 Prime is powered by Octa Core, 1.6 GHz Exynos 7 and it comes with 3 GB of RAM. The phone has 32GB of internal storage that can be expanded up to 256 GB via a micro SD card. As far as the cameras are concerned, the Samsung Galaxy J 7 Prime has a 13-megapixel primary camera on the rear and a 8-megapixel front shooter front camera for selfies. It is a dual sim device with a 5.5 inch TFT Full HD (1,080 × 1,920 pixels) display. It runs Android V 6.0.1 and is powered by a 3300 mAh non removable battery. Connectivity options include Wi-Fi, GPS, Bluetooth. Sensors on the phone include Ambient light sensor, Accelerometer, and Gyroscope. It is a marvel of technology by SAMSUNG. Now I can access internet at fast speed and download movies, songs, videos, my lessons and all the information that I require. I feel so empowered with this device.

B. Sardar Vallabhbhai Patel

Full name of 'Sardar Vallabhbahi Patel' was Sardar Vallabhbhai Jhaverbhai Patel. He was born on 31 October 1875 in Nadiad, Gujarat, India. His father's name was Jhaverbhai Patel, who was a simple farmer. His mother's name was Laad Bai, who was a simple lady.

Sardar Vallabhbhai Patel was one of the leaders of the Indian National Congress and one of the founding fathers of the Republic of India. He took active part in the freedom struggle of India.

Sardar Vallabhbhai Patel became the first Home Minister and Deputy Prime Minister of India. He used strength and determination to bring together the many Indian princely states to form one united country-India as we know it today. He was often known as the 'Iron Man of India'.

Sardar Vallabhbhai Patel died on 15 December, 1950 at the age of 75. He will ever be remembered for his great works.
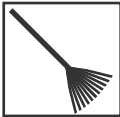
Poster Making

A.

| J O I N H A N D S | Charity begins at home
LET'S BEGIN WITH NEAT & CLEAN COLONY
join
A CLEANLINESS DRIVE
on
SUNDAY, THE 5th OCTOBER, 20XX
Assemble at Community Centre, Janakpuri
at 9 a.m. |

Remove filth

Each One, Clear One Patch

Clean Environment

A clean city
is a green city

Make Janakpuri
Spick and Span

Keep Delhi
Green & Clean

B.

TAKE
REGULAR EXERCISE
AND

★ *Become Active!*   ★ *Get Fit For Life!*   ★ *Enjoy Mental Alertness!*

Remember
A Healthy Body Shelters a Healthy Mind

Exercising can be fun — choose any one :
- ✿ Swimming
  - ✿ Jogging
    - ✿ Aerobics
      - ✿ Dancing
        - ✿ Working out at the Gym

Run and
have fun

Sport a
Healthy heart

Live Longer

Give your heart
a healthy resort

Issued by
Sports Authority of India

Essay Writing

1. **The Use of Mobile Phones**
   Nowdays, the mobile phone plays a major role in our lives, which brings many benefits to us but also contains some drawbacks. Both these sides will be discussed in this essay.
   Generally, the mobile phone will certainly bring about a lot of advantages. First of all, the mobile phone is considered the quickest means of communication in our daily life. We can contact easily with our friends and our relatives wherever by calling or sending messages.

Second, the mobile phone is also a means of entertainment for people. We can listen to music and play games on mobile phone. Moreover, by using the latest apps on smartphones, we can access to the internet to watch Films and check our profile in social networks and update our status wherever we are. Finally, if we have a smartphone in hand, our study becomes more effective such as look up dictionary, find out many sources of reference on internet which is useful for study.

On the other hand, the mobile phone has also many disadvantages. First, telephone users become to addict of their mobile phones if they are too depend on it. Moreover, the ability of human communication is limited if the mobile phone is more present in some events such as class meetings, on the bus, in the park...some people only focus on their phone without communicating. The use of mobile phones too much will make people take a lot of time, it not only influence on study results, makes students distraction but also it is cause of eye-diseases. Finally, we shouldn't use mobile phone while we are driving because it can lead traffic accidents.

In conclusion, mobile phone is necessary for our modern lives today. However it is helpful or not, which depends on our ways of using it. It will be better if we use it for true purpose and in an appropriate time.

2. **Importance of Yoga in Modern age**

Yoga aids in controlling a person's body, mind and soul. It brings the physical and mental discipline together to soothe the body and mind. It also aids in managing stress and anxiety and keeps you relaxed. Yogasanas are known to develop vigor, flexibility and confidence.

Benefits of Yoga

- ❖ Improves flexibility of muscles
- ❖ Corrects the posture and alignment of the body
- ❖ Renders better digestive system
- ❖ Strengthens internal organs
- ❖ Cures asthma
- ❖ Cures diabetes
- ❖ Helps in curing heart related problems
- ❖ Helps in skin glow
- ❖ Promotes strength and stamina
- ❖ Tones internal organs
- ❖ Improves concentration
- ❖ Helps in mind and thought control
- ❖ Keeps mind calm by overcoming anxiety, stress and depression
- ❖ Helps in releasing tension
- ❖ Helps in blood circulation and muscle relaxation
- ❖ Weight reduction
- ❖ Protection from injury

These are among the numerous benefits of yoga. Yoga focuses on your natural tendency towards health and self-healing.

A yoga session mainly comprises of breathing exercises, meditation and yogasanas that stretch and strengthen various muscle groups. It is a good substitute for avoiding medicines that are harmful for our mental and physical health.

One of the main benefits of practicing yoga is that it helps manage stress. Stress is common these days and is known to have devastating effects on one's body and mind. Due to stress people develop serious problems like sleeping disorder, neck pain, back pain, headaches, rapid heart rate, sweaty palms, dissatisfaction, anger, insomnia and inability to

concentrate. Yoga is known to be really effective in curing these kinds of problems over a period of time. It helps a person in managing stress by meditation and breathing exercise and improves a person's mental well being. Regular practice creates mental clarity and calmness there by relaxing the mind.

Conclusion

Yoga is a very useful practice which is easy to do and helps in getting rid of certain serious health problems that are common in today's life style.

3. **The Education of a Girl Child**

Girls' education is highly important and crucial for the development of a nation. There is a very famous saying in Africa which says, "If you educate a man, you educate an individual, but if you educate a woman, you educate a nation. In the light of the above mentioned axiom, empowering the girl child with education is the best and the wisest option a nation could have in empowering itself." In the big vast world of ours, many nations in African, Asian, and South American continents are still grappling with the problems of backwardness. Hunger, poverty, unemployment, poor standards of living, poor medical facilities, poor education, etc, are still lingering on in the developing countries.

Empowering girl child with education is the only panacea. An educated girl will have the power to make her dreams come true. Only an educated girl can earn her own living and free in true sense. With her education, not only she will be benefitted, she will spread the light of education all around her. She will teach her brothers, sisters, neighbours, and other adults, this will lead to a positive ripple effect that will lead to skill enhancement and the prospects of being hired by competent companies will increase. Besides, educating a girl child ensures the surety of education of the other family members. Besides, educating a girl is the best investment. By educating the girl child, the family is making a sound financial investment. When the girl child is educated, she will reduce the financial burden of her father and later her husband. India is fast developing country. The goal of complete advancement is not possible until each and every Indian becomes not only highly educated but also highly skilled. This task can only be accomplished with the girl's education and contributions. So, empowering girl child with education is the best investment a nation can make!

Hindi–7

कार्यपत्रक–1

वर्ण-विचार

(क) 1. ह्रस्व स्वर; 2. दीर्घ; 3. संयुक्त; 4. ऊष्म; 5. अ

(ख) 1. (✓); 2. (✓); 3. (✗); 4. (✗); 5. (✗)

(ग) 1. पपीता – प् + अ + प् + ई + त् + आ = 6 वर्ण

2. कौआ – क् + औ + आ = 3 वर्ण

3. गमला – ग् + अ + म् + अ + ल् + आ = 6 वर्ण

(घ) क्ष – क्षत्रिय, क्षति   ज्ञ – ज्ञानी, ज्ञापित

त्र – त्रिशूल, त्रयोदश   श्र – श्रमिक, श्रद्धा

कार्यपत्रक–2

संधि

(क) रवि + इंद्र = रविंद्र   देव + ऋषि = देवर्षि   सु + आगत = स्वागत

वीर + उचित = वीरोचित   अनु + एषण = अन्वेषण   पौ + अक = पावक

पो + अन = पवन   सद् + एव = सदेव   सत्य + अर्थी = सत्यार्थी

विद्या + अर्थी = विद्यार्थी   मत + ऐक्य = मतैक्य   हरि + ईश = हरीश

शिव + आलय = शिवालय   महा + इंद्र = महेंद्र   एक + एक = एकैक

परि + छेद = परिच्छेद

(ख)
शब्द		संधि-विच्छेद	शब्द		संधि-विच्छेद	शब्द		संधि-विच्छेद
अत्याचार	=	अति + आचार	सूर्योदय	=	सूर्य + उदय	देवालय	=	देव + आलय
महर्षि	=	महा + ऋषि	इत्यादि	=	इति + आदि	परमेश्वर	=	परम + ईश्वर
रमेश	=	रमा + ईश	तपोभूमि	=	तपः + भूमि	नारीश्वर	=	नारी + ईश्वर
यद्यपि	=	यदि + अपि	परीक्षार्थी	=	परीक्षा + अर्थी	विद्यालय	=	विद्या + आलय
पित्राज्ञा	=	पितृ + आज्ञा	कमलेश	=	कमल + ईश	उज्ज्वल	=	उत् + ज्वल
दीपावली	=	दीप + अवली						

(ग)
विस्मयादि	=	विस्मय	+	आदि	✓	विस्मय + अयादि	☐	विषम + आदि	☐
मनोहर	=	मनो	+	हर	☐	मनः + हर	✓	मनोह + अर	☐
तन्मय	=	तत्	+	मय	✓	तन् + मय	☐	तन् + अमय	☐
सरोज	=	सर	+	ओज	☐	सरः + ज	✓	सरः + ओज	☐
दुर्बल	=	दुर्	+	बल	☐	दुर + बल	☐	दुः + बल	✓
निर्भय	=	निर	+	अभय	☐	निः + भय	✓	निर् + भय	☐
पावक	=	पा	+	ओक	☐	पौ + अक	✓	पा + वक्	☐

अत्यधिक	=	अति	+	अधिक	☑	अत्य	+	अधिक	☐	अत्	+	अधिक	☐
निर्विकार	=	निः	+	विकार	☑	निरा	+	विकार	☐	निर्	+	विकार	☐

कार्यपत्रक-3

वर्तनी की शुद्धता

(क) कौमल ☐ गोयल ☑ क्षात्र ☐ बकरी ☑ बंदर ☑
लघू ☐ रूठ ☑ उत्थान ☑ वधु ☐ पूर्ति ☑
श्रीमति ☐ दीवार ☑ तिथि ☑ अभिनेता ☑ परिक्षा ☐
सर्प ☑ अतिथि ☑ बौतल ☐ कौयल ☐ हाथी ☑
नमकिन ☐ आपका ☑ उन्है ☐ दैवी ☐ कुंवर ☑

(ख) 1. ✓; 2. ✓; 3. ✓; 4. ✗; 5. ✗; 6. ✓

(ग)
1. ब्रह्मा ने उसे दिव्य दृष्टि प्रदान की।
2. दिल्ली में डेंगू का जोर है।
3. रोगी को फल काटकर खिलाओ।
4. गाय का घी अति उत्तम है।
5. केवल सौ रुपये चाहिए।
6. हम वहाँ नहीं जा सकते।
7. घड़े का ठंडा पानी पिलाइए।
8. नदी में बाढ़ आ रही है।
9. नीचे मत देखो।
10. सूर्य पूर्व में उगता है।
11. हरीश ने पूजा कर ली है।
12. रेलगाड़ी छूट चुकी है।
13. देवेंद्र बाजार जाएगा।
14. सुशील कुमार एक सर्वोत्कृष्ट खिलाड़ी है।
15. कृतिका विदेश यात्रा के लिए रवाना हो चुकी है।

कार्यपत्रक-4

शब्द-विचार

(क) मामा – रूढ़; दशानन – योगरूढ़; मुंडेर – रूढ़; सब्जीवाली – यौगिक; अधमरा – यौगिक; देश – रूढ़

(ख) 1. शब्द; 2. तीन; 3. आगत; 4. तद्भव

(ग) 1. बीमार, कुश्ती, आईना, चादर
2. किस्मत, औरत, वकील
3. तोप, मुगल, चेचक, कुली
4. टेलीफोन, पेंसिल, टीचर, टेलीविजन

(घ) तद्भव – आम, आग, नाक, उल्लू, इलायची, किरन, कौआ, घर, घड़ी, चाँद
तत्सम – आम्र, अग्नि, नासिका, उलूक, एला, किरण, काक, गृह, घटिका, चंद्र

कार्यपत्रक-5

उपसर्ग

(क) 1. शब्द के आरंभ में लगकर नए शब्दों का निर्माण करने वाले शब्दांश उपसर्ग कहलाते हैं।; 2. तीन

(ख) मान – सम्मान; वान – धनवान; जन्म – आजन्म; गुण – अवगुण; शेष – अवशेष; दोष – निर्दोष; नाथ – जगन्नाथ; शासन – सुशासन; कर्म – कुकर्म; गंध – सुगंध; अन – पवन; पेट – भरपेट; बोध – अबोध; पूत – कुपूत; डर – निडर

(ग)	मूल शब्द	उपसर्ग	मूल शब्द	उपसर्ग
	इज्जत	बा	चर	सह
	उम्र	कम	कार	तिरस्
	नाम	बद	आचार	अन्
	पात्र	कु	बोध	अ
	घट	औ	थान	उत्
	वेदन	नि	जन्म	पुनर्
	मान्	अप	भव	परा
	योग	अभि		
	नाम	बद		

(घ) ला – लापता, लाजवाब, लाइलाज।   खुश – खुशनसीब, खुशहाली, खुशदिल।

मान – मानसिक, मानसरोवर, मानवीय।   अध – अधपका, अधकचरा, अधबना।

सत् – सत्संग, सत्पुरुष, सत्नाम।

कार्यपत्रक-6

प्रत्यय

(क) 1. शब्दांश, अर्थ, परिवर्तन   2. विशेषण, अव्यय, तद्धित

(ख) पुष्प – पुष्पित; विभाजन – विभाजित; संतुलन – संतुलित; नियम – नियमित; पालन – पालित; फल – फलित; कथन – कथित; सम्मान – सम्मानित; संबंध – संबंधित; उपेक्षा – उपेक्षित; अपमान – अपमानित; विद् – विद्वित;

(ग) इक – मौलिक; इत – शासित; ईला – चमकीला; आलु – कृपालु; ईय – सम्माननीय; वाला – सब्जीवाला; ईन – कुलीन; आकू – पढ़ाकू; हारा – लकड़हारा; आर – लाचार; पढ़ – पढ़ाई; आऊ – प्याऊ

(घ) ता – भावुकता; पन – अपनापन; आवट – लिखावट; आहट – गरमाहट; आई – पढ़ाई; आवा – दिखावा

(ङ)

लकड़हारा	–	लकड़	हारा	बचपन – बच्चा	पन
दयावान	–	दया	वान	पाठक – पाठ	अक
सरलता	–	सरल	ता	उच्चतम – उच्च	तम
लुटिया	–	लोटा	इया	सिरजनहार – सिरजन	हार
पुष्पित	–	पुष्प	इत	लिखावट – लिखना	आवट
प्रफुल्लता	–	प्रफुल्ल	ता	स्वर्णकार – स्वर्ण	कार
धनिक	–	धन	इक	ईमानदार – ईमान	दार

कार्यपत्रक-7

समास

(क) 1. दो या दो से अधिक पदों के मेल से जो विकार उत्पन्न होता है, उसे समास कहते हैं।

2. (i) तत्पुरुष – युद्ध का क्षेत्र – युद्धक्षेत्र   (ii) बहुव्रीहि – दस मुख वाला – दशानन, रावण

(iii) द्वंद्व – अपना और पराया – अपना-पराया   (iv) द्विगु – त्रिवेणी – तीन वेणियों का समूह

(v) कर्मधारय – नीला कमल – नीलकमल   (vi) अव्ययीभाव – प्रत्येक साल – हरसाल

3. कर्मधारय – इसमें पूर्व पद विशेषण तथा उत्तर पद विशेष्य होता है।

बहुव्रीहि – दोनों समस्तपद गौण होते हैं व तीसरा पद प्रधान होता है।

(ख) 1. भारत के वासी; 2. कीचड़ में उगता है जो; 3. कमल के समान नयन, विष्णु; 4. पेट भरने तक; 5. ऊपर और नीचे; 6. पाँच मेवों का समूह; 7. हर रोज़; 8. सुख और दुख; 9. शक्ति के अनुसार; 10. दस मुख हैं जिसके अर्थात्, रावण

(ग) 1. गजानन, बहुव्रीहि; 2. दोपहर, तत्पुरुष (द्विगु); 3. हस्तलिखित, तत्पुरुष

(घ) 1. धर्मवीर, राजकुमार; 2. दोपहर, चौराहा ; 3. नीलकंठ, श्वेतांबर ; 4. पीतांबर, दशानन

कार्यपत्रक-8

संज्ञा

(क) 1. संज्ञा; 2. भेद; 3. व्यक्तिवाचक; 4. जातिवाचक; 5. भाववाचक

(ख) 1. व्यक्तिवाचक; 2. भाववाचक; 3. जातिवाचक; 4. भाववाचक; 5. जातिवाचक; 6. भाववाचक

(ग) 1. मनुष्यता; 2. पूजा; 3. वकालत; 4. कमाई; 5. पशुता; 6. लिखावट; 7. जिनता; 8. उदारता; 9. परायापन; 10. कोमलता

(घ)

जातिवाचक संज्ञा	– लड़का, कुत्ता, बगीचा, गाँव
व्यक्तिवाचक संज्ञा	– रामायण, ताजमहल, नरेंद्र मोदी, यमुना
भाववाचक संज्ञा	– पूजा, कमाई, परायापन, मनुष्यता
समुदायवाचक संज्ञा	– गुच्छा, बटालियन, सभा, दल
द्रव्यवाचक संज्ञा	– सोना, चीनी, नमक, ताँबा

कार्यपत्रक-9

लिंग

(क) 1. ✗; 2. ✓; 3. ✓; 4. ✓; 5. ✗

(ख)

शिष्या	शिष्य	माता	पिता	लड़का	लड़की	नानी	नाना
भवदीय	भवदीया	नायक	नायिका	दर्शक	दर्शिका	धैर्यवान	धैर्यवती
सम्राट	सम्राज्ञी	बिलाव	बिल्ली	ब्रह्मचारी	ब्रह्मचारिणी	चोर	चोरनी

(ग) 1. विदुषी; 2. नेत्री; 3. गुड़िया; 4. मोरनी; 5. नाग; 6. चौधराइन; 7. अध्यापिका; 8. दुल्हन

(घ) 1. लेखिका; 2. दात्री; 3. पापिन; 4. बहनोई; 5. स्वामिनी; 6. पिता

कार्यपत्रक-10

वचन

(क) 1. पक्षी उड़ गए। 2. मेरे बेटे पास हो गए। 3. लड़के गाने गा रहे हैं।
4. नदियों पर पुल बन रहे हैं। 5. बालकों ने अच्छे लेख लिखे।

(ख) 1. रुपये; 2. पुस्तकें; 3. पक्षियों; 4. पात्रों; 5. लोग

(ग) 1. कवियों को; 2. बहुएँ; 3. इन घटनाओं; 4. नदियों का; 5. आँखों की; 6. इन बातों को; 7. सेनाओं को; 8. साधुओं को; 9. वस्तुएँ; 10. नारियों में

(घ) 1. दो और दो चार होते हैं।   2. हमने फुटबॉल के दोनों मैच जीत लिए हैं।

3. दस ब्राह्मणों को बुला लाओ।   4. भारत में अनेक जातियाँ रहती हैं।

5. हम फिल्म देखने जा रहे हैं।

कार्यपत्रक-11

कारक

(क) 1. से; 2. पर; 3. ने; 4. का; 5. की; 6. में; 7. ने, को, से; 8. पर

(ख) 1. सत्य; 2. असत्य; 3. सत्य; 4. असत्य; 5. असत्य

(ग) 1. जो संबंध बताए।   2. जिससे अलग होने का बोध हो।

3. दो से अधिक शब्दों या वाक्यों को जोड़ने का काम।   4. जिसके लिए कुछ किया जाए।

(घ) 1. छत पर बंदर बैठा है।   2. कृतिका टब में नहा रही है।

3. वर्णिका ने खाना खा लिया।   4. दया बाजार से फल लाई।

कार्यपत्रक-12

सर्वनाम

(क) 1. निश्चयवाचक – वे सर्वनाम शब्द जो किसी निश्चित व्यक्ति या वस्तु का बोध कराते हैं।

अनिश्चयवाचक – वे सर्वनाम शब्द जो किसी अनिश्चित व्यक्ति या वस्तु का बोध कराते हैं।

2. निजवाचक – वे सर्वनाम शब्द जिनका प्रयोग कर्ता अपने लिए करता है।

पुरुषवाचक – वे सर्वनाम शब्द जिन्हें वक्ता अपने लिए, सुनने वाले तथा अन्य व्यक्ति के लिए प्रयोग करता है।

(ख) 1. प्रश्नवाचक; 2. निजवाचक; 3. यह, वह, ये, वे; 4. कुछ, किसी; 5. संज्ञा

(ग) 1. वह पुस्तक पढ़ रहा है।   2. तुम क्या खा रहे हो?

3. यह मनोज की कार है।   4. अपना काम स्वयं करना चाहिए।

5. जिसकी लाठी उसकी भैंस।   6. राधिका ने किसी की मदद की।

(घ) 1. किसने यह कागज फेंका है।   2. हमारा घर यहाँ नहीं है।

3. अपना काम अपने आप करना चाहिए।   4. इसमें नमक नहीं है।

कार्यपत्रक-13

विशेषण

(क) 1. संज्ञा, सर्वनाम; 2. परिमाणवाचक; 3. संख्यावाचक; 4. व्यक्तिवाचक संज्ञा; 5. व्यक्तिवाचक

(ख) 1. एक – संख्यावाचक विशेषण; 2. कौन – प्रश्नवाचक; 3. एक किलोमीटर – परिमाणवाचक; 4. बहुत मीठे – गुणवाचक; 5. बहुत अच्छा – गुणवाचक

(ग) घर – घरेलू; इतिहास – ऐतिहासिक; प्यास – प्यासा; स्थान – स्थानीय; दिन – दैनिक; दर्द – दर्दनाक; वर्ष – वार्षिक; हिंसा – हिंसक; प्रकृति – प्राकृतिक; रंग – रंगीन; मेहनत – महेनती; शांति – शांत

(घ) सुंदर घड़ी, लाल गुलाब, पीली साड़ी, भारी बस्ता, बड़ी बहन, एक पुस्तक, दस पेंसिल, दो कॉपी, छोटी घंटी, बेईमान चपरासी।

क्रिया

सकर्मक क्रिया	अकर्मक क्रिया

(क) 1. पुस्तक, नहीं दूँगा।

2. गाना, गाता है।

3. खाना, खाती है।

4. सो गया।

5. झूठ बोल रहा है।

(ख) 1. खा लिया, ले जाना, चले गए; 2. बैठकर, खेलकर ; 3. पढ़ा, पिया ; 4. उठवाना, बनवाना, दोहराना

(ग) 1. खटखटाया, नामधातु; 2. पीकर, पूर्वकालिक; चली गई, संयुक्त क्रिया; 3. करवाती, प्रेरणार्थक ; 4. सोई है, संयुक्त; 5. खा रही, संयुक्त

(घ) 1. पढ़ा, पढ़; 2. जाएँगे, जा; 3. देखती, देख; 4. बोलता, बोल

काल

(क) 1. उस समय दुकान बंद थी। 2. मैंने घर जाकर कार्य पूर्ण किया होगा।

3. हाथी नदी में नहाता है। 4. निशा सोएगी।

(ख) 1. भविष्यत्काल; 2. भूतकाल; 3. भविष्यत्काल; 4. भूतकाल; 5. भूतकाल; 6. वर्तमानकाल; 7. वर्तमानकाल; 8. भविष्यत्काल; 9. भविष्यत्काल

(ग) मध्यम पुरुष – तुम लिखते हो। तुम सब लिखते हैं। तुम लिखती हो।   तुम सब लिखती हो।

अन्य पुरुष – वह लिखता है।   वे लिखते हैं।   वह लिखती है।   वे लिखती हैं।

(घ) 1. वह मुझे बुलाएगा। 2. हम पिकनिक पर जाएँगे।

3. हरि मधुर गीत गाएगा। 4. रेलगाड़ी तीन बजे छूटेगी।

5. मंत्रीजी भाषण देंगे।

वाच्य

(क) 1. कर्तृवाच्य; 2. कर्तृवाच्य; 3. कर्तृवाच्य; 4. कर्तृवाच्य; 5. भाववाच्य; 6. कर्तृवाच्य

(ख) 1. बालिकाओं से हँसा जाता है।

2. लता से फोन नहीं चलाया जाता।

3. मैंने पुस्तक पढ़ी।

4. बच्चों ने निबंध पढ़े।

5. भारत-पाक क्रिकेट मैच में दर्शकों से खुश हुआ जा रहा था।

6. लड़के द्वारा पत्र लिखा जा रहा है।

(ग) 1. ✓; 2. ✓; 3. ✓; 4. ✓; 5. ✗

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कार्यपत्रक-17

अव्यय (अविकारी)

(**क**) **1.** (v); **2.** (iii); **3.** (ii); **4.** (i); **5.** (iv)

(**ख**) **1.** पर; **2.** इसीलिए; **3.** मात्र; **4.** आहा!; **5.** या तो; **6.** जी ठीक

(**ग**) **1.** सत्य; **2.** असत्य; **3.** सत्य; **4.** सत्य

(**घ**) **1.** जैसा करोगे वैसा भरोगे। **2.** हमें कभी भी झूठ नहीं बोलना चाहिए।

3. जल्दी-जल्दी चलो अन्यथा रेलगाड़ी छूट जाएगी। **4.** महात्मा गांधी हिंसा के खिलाफ थे।

5. उफ्! कितनी गर्मी है। **6.** मेरे सिवाय इस कार्य को कोई नहीं कर सकता।

कार्यपत्रक-18

वाक्य-विचार

(**क**) **1.** सरल; **2.** संयुक्त; **3.** मिश्रित; **4.** सरल; **5.** मिश्रित; **6.** सरल; **7.** संयुक्त; **8.** मिश्रित; **9.** मिश्रित;
10. सरल; **11.** संयुक्त; **12.** सरल; **13.** संयुक्त; **14.** मिश्रित; **15.** संयुक्त

(**ख**) **1.** कछुआ धीरे-धीरे चलता है। **2.** मामाजी आज आएँगे।

3. अधिक सोना ठीक नहीं है। **4.** उतना लिखो जितना जरूरी हो।

5. मुकेश परसों दिल्ली जाएगा। **6.** वह शांतिपूर्वक सो रहा है।

7. रमा अचानक छत से गिर गई।

कार्यपत्रक-19

विलोम शब्द

(**क**) **1.** मिथुन बहुत कम खेलता है। **2.** किसान रात भर खेत में काम नहीं करता है।

3. मैंने कम खाया। **4.** संजय सायं काल घूमने जाता है।

5. रात में ज्यादा खाना चाहिए। **6.** महेश कम पढ़ता है।

7. हुसैन कर्कश गाता है। **8.** तुम ऐसे क्यों बैठ रहे हो?

(**ख**) **1.** अमृत; **2.** अपेक्षा; **3.** निर्माण; **4.** कृतज्ञ; **5.** सुगम; **6.** पाताल; **7.** उच्च; **8.** भोगी; **9.** विषाद; **10.** आशा

(**ग**) **1.** एकता में बल है।

2. भारत अनेकता में एकता का सबल उदाहरण है।

3. पृथ्वीराज चौहान की कीर्ति देखते ही बनती है।

4. उसकी एक गलती ने उसे अपकीर्ति का भागी बना दिया।

5. माँ के हाथ का भोजन अमृत के समान होता है।

6. शिव जी ने विष का पान किया।

7. सूरज का ताप बहुत अधिक है।

8. गर्मी में शीतलहर आनंदमयी होती है।

पर्यायवाची शब्द

(**क**) 1. सुरेश; 2. देवनदी; 3. केसरी; 4. तन; 5. तट; 6. भवन; 7. ज्योत्सना; 8. तरु; 9. जलज; 10. शशि

(**ख**) वायु – हवा, पवन; सूर्य – रवि, सूरज; कनक – सोना, स्वर्ण; जंगल – वन, कानन; दूध – दुग्ध, पय; राजा – नृप, नरेश; गज – हाथी, हस्ती; दिन – दिवस, वार; इच्छा – चाह, कामना; गंगा – देवापगा, देवनदी; मेघ – बादल, अंबुद; आग – पावक, अनल; शिव – महादेव, शंकर; समुद्र – सागर, सिंधु; किरण – मरीचिका, कर; स्त्री – महिला, नारी; मनुष्य – मानव, इंसान; पानी – जल, नीर; अश्व – घोड़ा, घोटक; कमल – जलज, पंकज; पार्वती – उमा, गौरी; भ्रमर – भौंरा, अलि।

समरूपी भिन्नार्थक शब्द

(**क**) 1. पत्नी; 2. व्यर्थ; 3. व्याधि; 4. गर्व; 5. पर्याप्त; 6. तंद्रा; 7. आनंद

(**ख**) 1. रिवाज़, योजना; 2. काबिल, समर्थ; 3. बिना मूल्य के, कीमती; 4. उदासी, विषाद; 5. हाथ से फेंके जाने वाले हथियार, हाथ में लेकर लड़ा जाने वाले हथियार; 6. इजाज़त, आज्ञा; 7. संन्यासी, साधु; 8. घर, संसार; 9. अजीब, पतन; 10. स्पष्टीकरण, घोषणा; 11. आने वाला, भावुक; 12. प्यार, विवाह।

समान अर्थ प्रतीत होने वाले शब्द

(**क**) 1. हमारा लोकतंत्र न्याय-प्रिय है। 2. शिवाजी महाराज का निर्णय अटल था।

3. रमेश का विवेक अतुलनीय है। 4. आधा ज्ञान अज्ञेय होने से ज्यादा नुकसानदायक है।

(**ख**) 1. (v); 2. (iv); 3. (i); 4. (ii); 5. (vi); 6. (iii)

(**ग**) 1. अपेक्षा, उपेक्षा; 2. अंगना, अँगना; 3. परिणाम, परिमाण; 4. समान, सामान; 5. भुवन, भवन

अनेक शब्दों के लिए एक शब्द

(**क**) 1. (iii); 2. (v); 3. (iv); 4. (i); 5. (ii)

(**ख**) 1. नवजात; 2. कुटिल; 3. अहंकारी; 4. अधीर; 5. हस्तलिखित; 6. हितैषी; 7. जलचर; 8. चरित्रवान; 9. परोपकारी; 10. नश्वर

(**ग**) 1. दूर तक की सोचने वाला 2. जिसमें दया न हो।

3. जिस बात को बताया न जा सके। 4. जो सामने हो।

5. घास-फूस से बनी कुटिया। 6. जिसे जाना न जा सके।

7. जिसके माता-पिता न हों। 8. जो दिखाई न दे।

कार्यपत्रक-24

शब्द एक अर्थ अनेक

(क) 1. (iv); 2. (iii); 3. (i); 4. (ii); 5. (i)

(ख) 1. (iv); 2. (ii); 3. (iii); 4. (i); 5. (i)

(ग) 1. (iii); 2. (ii); 3. (iii); 4. (i); 5. (iii)

कार्यपत्रक-25

मुहावरे

(क)
1. बुरी तरह हराना।	क्रिकेट मैच में भारत ने पाक के छक्के छुड़ा दिए।
2. बहुत आसान कार्य।	नदी को पार करना मेरे लिए बाएँ हाथ का खेल है।
3. मदद करना।	मुसीबत में सभी ने सुरेश का हाथ बँटाया।
4. अत्यंत खुश होना।	बेटे की नौकरी लगने पर गुप्ता जी फूले नहीं समाए।
5. बढ़ा-चढ़ा कर बात करना।	छोटी-सी बात को नमक-मिर्च लगाने से दंगे तक हो जाते हैं।
6. बहुत समय बाद दिखना।	शादी होते ही मुकुल ईद का चाँद हो गया।
7. कड़ी मेहनत करना।	नौकरी के लिए रमेश ने बहुत पापड़ बेले।

(ख) 1. फूला न; 2. छक्के छुड़ा; 3. आँखों का तारा; 4. से बातें करती; 5. मुँह में पानी।

(ग) 1. आँखों का तारा; 2. ईद का चाँद होना; 3. दाँत खट्टे करना

कार्यपत्रक-26

लोकोक्ति

(क) 1. (i); 2. (ii); 3. (iv); 4. (ii); 5. (iv)

(ख)
1. घमंड में रहना।	बेटे के अमेरिका जाने से शर्मा जी के पाँव धरती पर नहीं पड़ रहे।
2. धोखा देना।	चोर पुलिस को चकमा देकर भाग गया।
3. झूठी धमकी देना।	राजेश कर कुछ नहीं सकता बस बंदर घुड़की देता है।
4. शर्मिंदा होना।	नकल करते हुए पकड़े जाने पर रमन पर घड़ों पानी पड़ गया।

कार्यपत्रक-27

अपठित बोध

1. मन, मस्तिष्क व अच्छे विचार ही वास्तविक सुंदरता है।

2. समय बीतने के साथ शारीरिक सुंदरता कम हो जाती है अर्थात् यह दिखावा मात्र है।

3. जो मनुष्य शारीरिक सौंदर्य को देखकर प्रेम करता है।

4. मन की सुंदरता को देखकर प्रेम करने वालों का

5. समर्पण और बलिदान की।

6. प्रकृति – प्रकृति ईश्वर की मनुष्य के लिए देन है।

वनस्पतियाँ – वनस्पतियाँ प्रकृति की देन हैं।

कर्त्तव्य – प्रकृति का संरक्षण करना मानव का कर्त्तव्य है।

अनंत – माता-पिता अपने बच्चों से अनंत प्रेम करते हैं।

कार्यपत्रक-28

संवाद लेखन

(क) माँ – उठ गए तुम?

पुत्र – हाँ, माँ।

माँ – जा के नहा लो तुम।

पुत्र – लेकिन माँ आज नाश्ते में क्या है?

माँ – आज तुम्हारा मनपसंद नाश्ता बनाया है।

पुत्र – माँ, आज आपने आलू के पराँठे बनाए हैं।

माँ – सही बोले तुम।

पुत्र – माँ मैं जल्दी से नहाकर आता हूँ।

(ख) आरव – क्या तुम पौधारोपण के महत्त्व को जानते हो?

विजय – नहीं, मित्र।

आरव – ठीक है, तो मैं तुम्हें बताता हूँ।

विजय – हाँ, बताइए।

आरव – पौधारोपण पर्यावरण संतुलन व पृथ्वी के संचालन में सहायक है।

विजय – इस जानकारी के लिए धन्यवाद, मित्र।

आरव – चलो, हम भी पौधारोपण करते हैं।

विजय – ठीक है, चलो।

कार्यपत्रक-29

डायरी लेखन

(क) प्रिय डायरी!

आज नदी में अचानक बाढ़ आ जाने से हमारा शहर पानी में डूब गया। सभी घर पानी से लबालब थे। खाने-पीने का सामान पानी में बह रहा था। स्त्री-पुरुष बच्चे सभी घरों की छतों पर बैठ गए। चारों तरफ चीख-पुकार का माहौल था। हम सब भी भूखे-प्यासे अपने घर की छत पर बैठे थे। पेड़-पौधे उखड़कर पानी में बह रहे थे। हमारे पशु भी बाढ़ के पानी में बह गए। जहरीले साँप, बिच्छू आदि कीड़े-मकोड़े अपने प्राण बचाने के लिए घरों की दीवारों और छतों पर आ रहे थे। हम सब उन्हें देखकर डर से काँप रहे थे। तभी समाज-सेवी संस्थाओं के तथा सरकारी लोग हमारा बचाव करने आ गए। हैलीकॉप्टर द्वारा हमारे पास भोजन, पानी की बोतलें, दवाएँ आदि डाली गईं। नावों के द्वारा हम लोगों को बाहर निकालकर राहत शिविर में लाया गया। चार दिन बाद बाढ़ का प्रकोप शांत हुआ तब हम लोग अपने-अपने घर आए।

(**ख**) प्रिय डायरी!

कल विद्यालय का मेरा पहला दिन था। मेरे लिए सभी लोग अपरिचित थे। शुरू में तो मुझे बहुत अजीब-सा लगा लेकिन बाद में मेरे पड़ोसी छात्र ने मुझे अपना परिचय दिया। मुझे बहुत खुशी हुई। मेरी कक्षाध्यापिका ने कक्षा के सभी छात्र-छात्राओं को मेरा परिचय दिया और उनका परिचय मुझसे करवाया? तब कहीं लंच के बाद मुझे अच्छा लगने लगा। विद्यालय की छुट्टी होते-होते मेरे कई मित्र बन गए। मुझे बहुत खुशी हुई और नया विद्यालय मुझे अपना घर लगने लगा।

कार्यपत्रक-30

पत्र-लेखन

सविनय निवेदन यह है कि मैं कक्षा सात 'क' का छात्र हूँ। चूँकि पिछले पंद्रह दिनों से हमारे कंप्यूटर के अध्यापक कक्षा में नहीं आ रहे हैं इसलिए हमारी पढ़ाई नहीं हो पा रही। कल मुझे मेरी कक्षा-अध्यापिका ने बताया था कि हमारे कंप्यूटर के अध्यापक ने स्कूल छोड़ दिया है। वे कहीं अन्य विद्यालय में चले गये हैं।

आपसे मेरी विनम्र प्रार्थना है कि यदि आप नए कंप्यूटर अध्यापक की व्यवस्था करेंगे तो आपकी बहुत कृपा होगी और हमारी पढ़ाई फिर से नियमित रूप से हो सकेगी।

कार्यपत्रक-31

निबंध लेखन

योग और उसका महत्त्व

कहा जाता है कि योग हिंदू धर्म से उत्पन्न हुआ है और आज दुनिया भर में इसका अभ्यास किया जा रहा है। लोगों ने योग के गुणों के बारे में सीखा है और इसे व्यायाम और ध्यान के रूप में स्वीकार किया है। मूल रूप से योग न केवल व्यायाम का एक रूप है बल्कि यह स्वस्थ, खुशहाल और शांतिपूर्ण तरीके से जीने का एक प्राचीन ज्ञान है। यह आंतरिक शांति और आत्मीय ज्ञान प्राप्त करने में मदद करता है।

लोगों को आमतौर पर लगता है कि योग व्यायाम का एक रूप है जिसमें शरीर के हिस्सों को हिलाना-डुलाना शामिल है लेकिन योग व्यायाम से बढ़कर है। योग मानसिक, आध्यात्मिक और शारीरिक पथ के माध्यम से जीवन जीने की कला है। यह स्थिरता प्राप्त करने और आंतरिक आत्म की चेतना में ध्यान लगाने में सहायता करता है। मन, भावनाओं और शारीरिक आवश्यकताओं के बारे में ज्यादा न सोचने और दिन-प्रतिदिन जीवन की चुनौतियों का सामना कैसे करें यह भी सीखने में मदद करता है। योग शरीर, मन और ऊर्जा के स्तर पर काम करता है। योग का नियमित अभ्यास शरीर में सकारात्मक बदलाव लाते हैं जिनमें मजबूत मांसपेशियाँ, लचीलापन, धैर्य और अच्छा स्वास्थ्य शामिल है।

हमें योग के प्रति धैर्य रखना चाहिए। आमतौर पर लोगों को वजन कम करने के लिए दवा, स्टेरॉयड या सर्जरी के उपयोग की तरह शॉर्टकट पसंद हैं जो स्पष्ट रूप से समय के साथ शरीर पर खराब प्रभाव डालते हैं।

Operations of Integers

A. 1. (iv), 2. (iii), 3. (ii)

B. 1. $-85 + (-7)$
  $= -85 - 7 = -92$

 2. $23 + (-13)$
  $= 23 - 13 = 10$

 3. $-25 + 35 = 10$

 4. $-19 + 5 = -14$

 5. $22 + (-33) = 22 - 33 = -11$

C. 1. $-7 - (-10) = -7 + 10 = 3$

 2. $-13 - 23 = -36$

 3. $9 - (-5) = 9 + 5 = 14$

 4. $-38 - (-44) = -38 + 44 = 6$

 5. $-64 - (-73) = -64 + 73 = 9$

 6. $29 - (-8) = 29 + 8 = 37$

D. 1. $(-19) + \underline{\quad} = -31$

  $\underline{\quad} = -31 + 19$

  $= -12$

 2. $(-7) + \underline{\quad} = -12$

  $= -12 + 7$

  $= -5$

E. 1. $(-5)^4 = -5 \times -5 \times -5 \times -5$

  $= 625$

 2. $(-3)^4 \times (-2)^2 \times (-1)^4$

  $= -3 \times -3 \times -3 \times -3 \times -2 \times -2 \times -1 \times -1 \times -1 \times -1$

  $= 81 \times 4 \times 1 \times 1$

  $= 324$

 3. $(-4)^3 \times (-10)^2 = -4 \times -4 \times -4 \times -10 \times -10$

  $= -64 \times 100$

  $= -6400$

 4. $(-1)^9 \times (-1)^{53} \times (-1)^6 -1 \times -1 \times 1 = 1$

 5. $(-2)^8 = -2 \times -2 \times -2 \times -2 \times -2 \times -2 \times -2 - 2$

  $= 256$

 6. $(-3)^4 = -3 \times -3 \times -3 \times -3 \times$

  $= 81$

F. $5 \times [25 + \{(-4) \times (16 - 8 \div 2)\}]$

 $5 \times [25 + \{(-4) \times (16 - 4)\}]$

 $5 \times [25 + \{(-4) \times (12)\}$

 $5 \times [25 + (-48)\}$

 $5 \times [-23] = -115$

G.
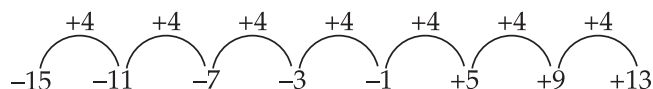
Multiplication and Division of Integers

A. 1. (iii), 2. (ii)

B. 1. $8 \times (-5) = -40$; 2. $4 \times (-13) = -52$;

3. $-8 \times 4 = -32$

C. 1. $(-3) \times (-4) = 3 \times 4 = 12$ 2. $-5 \times (-6) = 5 \times 6 = 30$

3. $-2 \times (-4) = 2 \times 4 = 8$

D. 1. $16 \times (-12) = -192$ 2. $-15 \times -75 = 15 \times 75 = 1125$

3. $0 \times -64 = 0$ 4. $13 \times 5 \times (-7) \times (-17)$

$13 \times 5 \times 7 \times 17 = 7735$

E. 1. $(-24) \times (-2)$ 2. $(-260) \times (-10)$

$24 \times 2 = 48$ $= 260 \times 10 = 2600$

3. $(-11)^{(-1)} \times (-1)$ 4. -1×-874

$= 1 \times 1 = 1$ $= 1 \times 874 = 874$

5. $1 \times (-3) \times 9$ 6. $(-5) \times (-12) \times (-4)$

$1 = -27$ $5 \times 12 \times (-4) = 60 \times (-4) = -240$

7. $(-5) \times (-4) \times 10 \times (-1)$

$5 \times 4 \times 10 \times (-1)$

$200 \times (-1) = -200$

F. 1. $-120 \div (-5) = \dfrac{120}{5} = 24$ 2. $-58 \div (-2) = \dfrac{58}{2} = 29$

$$
\begin{array}{r}
5\overline{)120}\,(24 \\
-10\downarrow \\
\hline
20 \\
-20 \\
\hline
0
\end{array}
\qquad
\begin{array}{r}
2\overline{)58}\,(29 \\
-4\downarrow \\
\hline
18 \\
-18 \\
\hline
0
\end{array}
$$

3. $1312 \div (-41) = \dfrac{1312}{-41} = -32$ 4. $1926 \div (-8) = \dfrac{1926}{-8} = -240$

$$
\begin{array}{r}
41\overline{)1312}\,(32 \\
-123\downarrow \\
\hline
82 \\
-82 \\
\hline
0
\end{array}
\qquad
\begin{array}{r}
8\overline{)1920}\,(240 \\
-16\downarrow \\
\hline
32 \\
-32 \\
\hline
0
\end{array}
$$

G. 1. $-1476 \div 123 = \dfrac{-1476}{123} = -12$

$$123\overline{)1476}\,\underline{12}$$
$$\underline{-123}\downarrow$$
$$246$$
$$\underline{-246}$$
$$0$$

2. $56 \div (-7) = \dfrac{56}{-7} = -8$

$$7\overline{)56}\,\underline{8}$$
$$\underline{-56}$$
$$0$$

3. $210 \div (-30) = \dfrac{210}{-30} = -7$

$$30\overline{)210}\,\underline{7}$$
$$\underline{-210}$$
$$0$$

4. $-96 \div (-24) = \dfrac{-96}{-24} = \dfrac{96}{24} = 4$

$$24\overline{)96}\,\underline{4}$$
$$\underline{-96}$$
$$0$$

Worksheet-3

Properties of Integers

A. 1. (i), 2. (iv)

B. 1. Additive Identity, 2. Distributive property, 3. Commutative property,

4. Identity property, 5. Multiplicative Inverse, 6. Associative Property,

7. Additive Inverse,

8. Commutative property, 9. Identity property, 10. Distributive property

C. 1. a(12–5), 2. 7(ab), 3. 5 + 8, 4. 1(–4), 5. 0

D. 1. $7 \times [4 + (-2)] = -8 \times 4 + 8 \times x$

$$7 \times [4 - 2] = -32 + 8x$$
$$7 \times 2 = -32 + 8x$$
$$14 + 32 = 8x$$
$$= 46 = 8x$$
$$\dfrac{46}{8} = x, \; x = 5\dfrac{6}{8}$$

2. $x \times [7 + (-8)] = 15 \times 7 + (-8) \times 15$

$$x[+7 - 8] = 105 + (-120)$$
$$x \times (-1) = 105 - 120$$
$$-x = -15$$
$$x = 15$$

3. $5 \times [(-6) + x] = 15 \times (-6) + 5 \times 10$

$-30 + 5x = -90 + 50$

$-30 + 5x = -40$

$5x = -40 + 30$

$5x = -10$

$x = \dfrac{-10}{5} = -2$

Worksheet-4

Multiplication and Division of Fractions

A. 1. (i), 2. (iii), 3. (ii), 4. (ii)

B. 1. unit, 2. like, 3. infinite, 4. more, 5. 3

C. 1. $27.9 - 18.3 + 123.42 - 45.58$

$= 123.42 + 27.9 - 45.58 - 18.3$

$= 151.32 - 63.88$

$= \boxed{87.44}$

2. Let the number be x and y

Product of two number $= 2.0016$

$$x \times y = 2.0016$$

$$x = 0.72$$

$$0.72 \times y = 2.0016$$

$$y = \dfrac{2.0016}{0.72} = 2.78$$

3. $x + 7\dfrac{4}{15} = 8\dfrac{2}{5}$

$x = 8\dfrac{2}{5} - 7\dfrac{4}{15}$

$x = \dfrac{42}{5} - \dfrac{109}{15}$

L.C.M of 5, 15, is 15

$= \dfrac{126 - 109}{15} = \dfrac{117}{15}$

D. 1. $\dfrac{2}{5} \times 5\dfrac{1}{4} = \dfrac{2}{5} \times \dfrac{21}{4} = \dfrac{2 \times 21}{5 \times 4} = \dfrac{42}{20}$

2. $6\dfrac{2}{5}\times\dfrac{7}{9}$

$=\dfrac{32}{5}\times\dfrac{7}{9}=\dfrac{32\times7}{5\times9}=\dfrac{224}{45}$

3. $3\dfrac{4}{7}\times\dfrac{3}{5}=\dfrac{25}{7}\times\dfrac{3}{5}$

$\Rightarrow\dfrac{25\times3}{7\times5}=\dfrac{75}{35}\Rightarrow\dfrac{15}{7}$

E. 1. $\dfrac{7}{3}\div2$

$\dfrac{7}{3}\div\dfrac{2}{1}\Rightarrow\dfrac{7}{3}\times\dfrac{1}{2}=\dfrac{7\times1}{3\times2}=\dfrac{7}{6}$

2. $\dfrac{4}{9}\div5\Rightarrow\dfrac{4}{9}\div\dfrac{5}{1}$

$=\dfrac{4}{9}\times\dfrac{1}{5}\Rightarrow\dfrac{4\times1}{9\times5}=\dfrac{4}{45}$

3. $\dfrac{6}{13\div7}\Rightarrow\dfrac{6}{13}\div\dfrac{7}{1}$

$=\dfrac{6}{13}\times\dfrac{1}{7}=\dfrac{6\times1}{13\times7}=\dfrac{6}{91}$

Worksheet-5

Introduction to Rational Numbers

A. 1. (iv), 2. (ii), 3. (i)

B. 1. True, 2. True, 3. True, 4. True, 5. True, 6. True

C. $\dfrac{-2}{3},\dfrac{3}{-5}$

D. 1. –3, –30, –45 ;   2. –5, 12, –25 ;   3. 20, 20, –12   4. –6, –21, 14

Worksheet-6

Comparison of Rational Numbers

A. 1. False, 2. True, 3. False, 4. True, 5. True, 6. False

B. 1. =, 2. <, 3. <, 4. <, 5. >, 6. >, 7. <, 8. <, 9. =

C. 1. $\dfrac{-1}{6}$; 2. $\dfrac{-3}{7}$; 3. $\dfrac{2}{3}$; 4. $\dfrac{-1}{4}$; 5. $\dfrac{1}{4}$; 6. 0

D. 1. $\dfrac{-13}{15},\dfrac{-5}{3},\dfrac{2}{-5}=\dfrac{-13}{15},\dfrac{-5\times5}{3\times5},\dfrac{2\times3}{-5\times3}$

$=\dfrac{-13}{15},\dfrac{-25}{15},\dfrac{6}{-15}$

In ascending order, $=\dfrac{-25}{15},\dfrac{-13}{15},\dfrac{-6}{15}$

$=\dfrac{-5}{3},\dfrac{-13}{15},\dfrac{2}{-5}$

2. $\dfrac{1}{3}, \dfrac{7}{-3}, \dfrac{-13}{5}, \dfrac{-2}{1}$

$= \dfrac{1}{3} \times \dfrac{5}{5}, \dfrac{7 \times 5}{-3 \times 5}, \dfrac{-13 \times 3}{5 \times 3}, \dfrac{-2 \times 15}{15 \times 1}$

$= \dfrac{5}{15}, \dfrac{35}{-15}, \dfrac{-39}{15}, \dfrac{-30}{15}$

In ascending order $= \dfrac{-39}{15}, \dfrac{35}{-15}, \dfrac{-30}{15}, \dfrac{5}{15}$

Or $= \dfrac{-13}{5}, \dfrac{7}{-3}, -2, \dfrac{1}{3}$

3. $\dfrac{-3}{5}, \dfrac{-2}{5}, \dfrac{-1}{5}, \dfrac{2}{5} = \dfrac{-3}{5}, \dfrac{-2}{5}, \dfrac{-1}{5}, \dfrac{2}{5}$

4. $\dfrac{-3}{5}, \dfrac{7}{11}, \dfrac{-2}{3}, \dfrac{-6}{11}$

By converting it into the fractions having the same denominator.

$\dfrac{-3}{5} = \dfrac{-3 \times 33}{5 \times 33} = \dfrac{-99}{165}$

$\dfrac{7}{11} = \dfrac{7 \times 15}{11 \times 15} = \dfrac{105}{165}$

$\dfrac{-2}{3} = \dfrac{-2 \times 55}{3 \times 55} = \dfrac{-110}{165}$

$-\dfrac{6}{11} = \dfrac{-6 \times 15}{11 \times 15} = \dfrac{-90}{165}$

In ascending order $= \dfrac{-110}{165} < \dfrac{-99}{1655} < \dfrac{-90}{165} < \dfrac{105}{165}$

Or, $\dfrac{-2}{3} < \dfrac{-3}{5} < \dfrac{-6}{11} < \dfrac{7}{11}$

E. 1. $\dfrac{-10}{15}, \dfrac{1}{2}, \dfrac{-12}{10}$

$= \dfrac{10 \times 2}{15 \times 2}, \dfrac{1 \times 15}{2 \times 15}, \dfrac{-12 \times 3}{10 \times 3}$

$= \dfrac{-20}{30}, \dfrac{15}{30}, \dfrac{-36}{30}$

In descending order $= \dfrac{15}{30}, \dfrac{-20}{30}, \dfrac{-36}{30}$

Or $= \dfrac{1}{2}, \dfrac{-10}{15}, \dfrac{-12}{10}$

2. $\dfrac{7}{-10}, \dfrac{-3}{5}, \dfrac{5}{-6}$

$= \dfrac{7 \times 3}{-10 \times 3}, = \dfrac{3 \times 6}{5 \times 6}, \dfrac{5 \times 5}{-6 \times 5}$

$= \dfrac{21}{-30}, \dfrac{-18}{30}, \dfrac{25}{-30}$

In descending order $= \dfrac{-18}{30}, \dfrac{21}{-30}, \dfrac{25}{-30}$

Or $\qquad = \dfrac{-3}{5}, \dfrac{7}{-10}, \dfrac{5}{-6}$

3. $\dfrac{1}{2}, \dfrac{-3}{2}, -2, 2 = \dfrac{1}{2}, \dfrac{-3}{2}, \dfrac{-2 \times 2}{2 \times 1}, \dfrac{2 \times 2}{2 \times 1}$

$= \dfrac{1}{2}, \dfrac{-3}{2}, \dfrac{-4}{2}, \dfrac{4}{2}$

In descending order $= \dfrac{4}{2}, \dfrac{1}{2}, \dfrac{-3}{2}, \dfrac{-4}{2}$

Or $= 2, \dfrac{1}{2}, \dfrac{-3}{2}, -2$

4. $\dfrac{5}{6}, \dfrac{-3}{2}, -2, 2$

$= \dfrac{5}{6}, \dfrac{-3 \times 3}{2 \times 3}, \dfrac{-2 \times 6}{6 \times 1}, \dfrac{2 \times 6}{6 \times 1}$

$= \dfrac{5}{6}, \dfrac{-9}{6}, \dfrac{-12}{6}, \dfrac{12}{6}$

In descending order $= \dfrac{12}{6}, \dfrac{5}{6}, \dfrac{-9}{6}, \dfrac{-12}{6}$

Or $\qquad = 2, \dfrac{5}{6}, \dfrac{-3}{2}, -2$

Worksheet-7

Operations of Rational Numbers

A. 1. (iv), 2. (i),

3. $\left(\dfrac{-4}{3} + \dfrac{5}{3}\right) - \left(\dfrac{1}{3} - \dfrac{2}{3}\right)$

$= \left(\dfrac{-4 + 5}{3}\right) - \left(\dfrac{1 - 2}{3}\right) = \dfrac{1}{3} - \left(\dfrac{-1}{3}\right)$

$= \dfrac{1}{3} + \dfrac{1}{3} = \dfrac{2}{3}$

4. $x + \left(\dfrac{-5}{8} \right) = \dfrac{2}{9}$

$x = \dfrac{2}{9} + \dfrac{5}{8}$ L.C.M. is 9 and 8 is 72

$x = \dfrac{16 + 45}{72} = \dfrac{61}{72}$

B. 1. $\dfrac{-5}{7} + \dfrac{3}{7}$

$= \dfrac{-5 + 3}{7} = \dfrac{-2}{7}$

2. $\dfrac{-15}{4} + \dfrac{7}{4}$

$= \dfrac{15 + 7}{4} = \dfrac{-8}{4} = -2$

3. $\dfrac{6}{13} + \left(\dfrac{-9}{13} \right)$

$\dfrac{6}{13} - \dfrac{9}{13} = \dfrac{6 - 9}{13} = \dfrac{-3}{13}$

4. $\dfrac{31}{-4} + \left(\dfrac{-5}{8} \right)$ L.C.M. of 4, 8, is 8

$= \dfrac{31}{-4} - \dfrac{5}{8} = \dfrac{-62 - 5}{8} = \dfrac{67}{8}$

C. 1. $\dfrac{1}{3} - \dfrac{3}{4}$ L.C.M. of 3, 4, is 12

$= \dfrac{4 - 9}{12} = \dfrac{-5}{12}$

2. $\dfrac{-1}{1} - \left(\dfrac{-9}{7} \right) = \dfrac{-1}{1} + \dfrac{9}{7}$

$= \dfrac{-7 + 9}{7} = \dfrac{2}{7}$

3. $\dfrac{-1}{1} - \left(\dfrac{-18}{11} \right) = \dfrac{1}{1} + \dfrac{18}{11}$

$= \dfrac{11 + 18}{11} = \dfrac{29}{11}$

4. $\dfrac{1}{3} - \left(\dfrac{-5}{6} \right)$ L.C.M. of 3, 6 = 6

$= \dfrac{1}{3} + \dfrac{5}{6} = \dfrac{2 + 5}{6} = \dfrac{7}{6}$

D. Positive rational number.

E. The sum of two rational number $= -2$

Let x, y be the number

$x + y = -2$

$x = \dfrac{-14}{5}$

Put the value of x

$\dfrac{-14}{5} + y = -2$

$y = \dfrac{-2}{1} + \dfrac{14}{5}$

$y = \dfrac{-10 + 14}{5} = \dfrac{4}{5}$

F. $x + \left(\dfrac{-5}{8} \right) = -\dfrac{3}{2}$

$$\frac{x-5}{8} = \frac{-3}{2}$$

$$x = \frac{-3}{2} - \left(\frac{-5}{8}\right) \Rightarrow \frac{-3}{2} + \frac{5}{8}$$

$$x = \frac{-12+5}{8} = \frac{-7}{8}$$

G. $x - \left(\dfrac{-2}{3}\right) = \dfrac{-1}{6}$

$$x + \frac{2}{3} = \frac{-1}{6}$$

$$x = \frac{-1}{6} - \frac{2}{3}$$

$$x = \frac{-1-4}{6} = \frac{-5}{6}$$

H. 1. rational, 2. rational

Worksheet-8

Multiplication and Division of Rational Numbers

A. 1. 1, 2. no, 3. −1, 4. not, 5. 1/a, 6. a, 7. positive, 8. negative

B. 1. $\dfrac{7}{11} \times \dfrac{5}{4} = \dfrac{7 \times 5}{11 \times 4} = \dfrac{35}{44}$
2. $\dfrac{5}{7} \times \left(\dfrac{-3}{4}\right) \Rightarrow \dfrac{5 \times (-3)}{7 \times 4} = \dfrac{-15}{28}$

3. $\dfrac{-2}{9} \times \dfrac{5}{11} \Rightarrow \dfrac{(-2) \times 5}{9 \times 11} = \dfrac{-10}{99}$
4. $\dfrac{-3}{17} \times \dfrac{-5}{-4} = \dfrac{-3}{17} \times \dfrac{5}{4} = \dfrac{(-3) \times 5}{17 \times 4} = \dfrac{-15}{68}$

C. 1. $\dfrac{3}{5} \times \dfrac{(-7)}{8} = \dfrac{3 \times (-7)}{5 \times 8} = \dfrac{-21}{40}$
2. $\dfrac{-9}{2} \times \dfrac{5}{4} = \dfrac{(-9) \times 5}{2 \times 4} = \dfrac{-45}{8}$

3. $\dfrac{-6}{11} \times \dfrac{5}{3} = \dfrac{(-6) \times 5}{11 \times 3} = \dfrac{-30}{33} = \dfrac{-10}{11}$
4. $\dfrac{(-2)}{3} \times \dfrac{6}{7} = \dfrac{-2 \times 6}{3 \times 7} = \dfrac{-12}{21} = \dfrac{-4}{7}$

D. 1. $\dfrac{-3}{4}$ 　　 2. $\dfrac{-14}{19}$ 　　 3. $\dfrac{4}{5}$

E. Let the number be x

$$x \times \frac{-1}{6} = \frac{-23}{9}$$

$$x = \frac{-23}{9} \times -6$$

$$= \frac{-23 \times -6}{9} = \frac{46}{3}$$

F. Let the number be x

$$\frac{-33}{6} \div x = \frac{-11}{4}$$

$$x = \frac{-33}{6} \times \frac{1}{x} = \frac{-11}{4}$$

$$= \frac{-33}{6x} = \frac{-11}{4}, x = \frac{-33 \times 4}{6 \times -11}$$

$$x = \frac{-132}{-66} = 2$$

G. 1. Commutative Property, 2. Associative Property, 3. Multiplicative Identity, 4. Property of zero

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Worksheet-9

Terminating and Non-Terminating Decimals

A. 1. T, 2. T, 3. T, 4. NT, 5. NT, 6. NT, 7. T

B. 1. (i), 2. (iii), 3.

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

D.

Column A	Column B
$\frac{1}{2}$	0.5
$\frac{1}{25}$	0.04
$\frac{2}{215}$	0.016

Column A	Column B
$\frac{1}{3}$	0.33333
$\frac{1}{7}$	0.142857
$\frac{5}{6}$	00.833

Worksheet-10

Decimals

A. 1. $\frac{4}{5} \times \frac{2}{2} = \frac{8}{10} = 0.8$

2. $\frac{1}{25} \times \frac{4}{4} = \frac{4}{100} = 0.04$

3. $\frac{3}{20} \times \frac{5}{5} = \frac{15}{100} = 0.15$

4. $\frac{3}{4} \times \frac{25}{25} = \frac{75}{100} = 0.75$

B. 1. $0.55 = \frac{55}{100} = \frac{11}{20}$

2. $0.03 = \frac{3}{100}$

3. $0.75 = \frac{75}{100} = \frac{3}{4}$

4. $5.25 = \frac{525}{100} = 5\frac{1}{4}$

5. $2.1 = \frac{21}{10}$

6. $9.33 = \frac{933}{100} = 9\frac{33}{100}$

C. 1. Yes, 2. No, 3. Yes, 4. Yes, 5. No, 6. Yes

D. 1. (ii), 2. (iii), 3. (i)

E. 1. 4785.00, 2. 0.59, 3. 3, 4. 384.5

F. 1. $(15.64 - 8.64) \times 100$
$= 7 \times 100 = 700$

2. $(1.538 - 0.63) \times 500$
$= 0.908 \times 500 = 454$

G. 1. $6.4 \div 10000 = \dfrac{0.4}{10000} = 0.0004$

2. $0.0578 \div 1000 = \dfrac{0.0578}{1000} = 0.0000578$

3. $200.10 \div 100 = \dfrac{200.10}{100} = 2.001$

4. $98.764 \div 10 = \dfrac{98.764}{10} = 9.8764$

Worksheet-11

Exponential Notation

A. 1. (ii), 2. (ii)

B. The reciprocal of $\left(-\dfrac{5}{8}\right)^2 = \dfrac{1}{\left(\dfrac{-5}{8}\right)^2} = \left(\dfrac{8}{-5}\right)^2$

C. $\dfrac{-16}{181} = \dfrac{-(2\times 2\times 2\times 2)}{(3\times 3\times 3\times 3)} = \left(\dfrac{-2}{3}\right)$

D. 1. $\left(\dfrac{1}{4}\right)^3$ 2. $\left(\dfrac{1}{2}\right)^4$ 3. $\left(\dfrac{-3}{5}\right)^3$ 4. $\left(\dfrac{5}{7}\right)^5$

E. 1. $\left(\dfrac{8}{5}\right)^2$ 2. $\left(\dfrac{1}{2}\right)^3$

F. 1. $\dfrac{8}{-27} = \dfrac{2\times 2\times 2}{-(3\times 3\times 3)} = \left(\dfrac{2}{3}\right)^3$

2. $\dfrac{343}{1000} = \dfrac{7\times 7\times 7}{10\times 10\times 10} = \left(\dfrac{7}{10}\right)^3$

3. $\dfrac{21}{64} = \dfrac{(7\times 3)^1}{(64)^1} = \left(\dfrac{7\times 3}{64}\right)^1$

4. $\dfrac{-1}{28} = \dfrac{(-1)^2}{7\times (2)^2} = \dfrac{1}{7}\left(\dfrac{-1}{2}\right)^2$

G. 1. $B = \dfrac{-1}{2}, E = 9$ 2. $B = \dfrac{2}{9}, E = 10$

3. $B = \dfrac{3}{2}, E = 5$ 4. $B = \dfrac{-3}{7}, E = 5$

H. 1. $\dfrac{4}{-5} \times \dfrac{4}{-5} \times \dfrac{4}{-5} \times \dfrac{4}{-5} \times \dfrac{4}{-5} = \left(\dfrac{4}{-5}\right)^5$

2. $\dfrac{3}{4} \times \dfrac{3}{4} \times \dfrac{3}{4} \times \dfrac{3}{4} \times \dfrac{3}{4} \times \dfrac{3}{4} \times \dfrac{3}{4} \times \dfrac{3}{4} = \left(\dfrac{3}{4}\right)^8$

Worksheet-12

Laws of Exponents

A. 1. (i), 2. (ii)

B. 1. $\left(\dfrac{1}{-3}\right)$ 2. $\left(\dfrac{2}{3}\right)^3$ 3. $\left(\dfrac{-3}{4}\right)^4$ 4. 8

C. 1. $\dfrac{2^8}{2^6} = 2^{8-6} = 2^2 = 4$ 2. $\dfrac{4^3}{4^2} = 4^{3-2} = 4^1 = 4$

3. $\dfrac{3^5}{3^3} = 3^{5-3} = 3^2 = 9$ 4. $\dfrac{2^7}{2^3} = 2^{7-3} = 2^4 = 2 \times 2 \times 2 \times 2 = 16$

D. 1. $\dfrac{a^8 b^2 c^0}{a^5 b^5} = a^{8-5} \times b^{2-5} \times 1$ 2. $\dfrac{x^7 y^{10}}{x^3 y^5} = x^{7-3} \times y^{10-5}$

$a^3 \times b^{-3} = \dfrac{a^3}{b^3}$ $= x^4 y^5$

E. 1. $\left(\dfrac{2}{-5}\right)^2 \times \left(\dfrac{-2}{5}\right)^2$ 2. $\left(\dfrac{5}{-3}\right)^5 \times \left(\dfrac{1}{3}\right)^4$

$= \left(\dfrac{-2}{5}\right)^{2+2} = \left(\dfrac{-2}{5}\right)^4 = \dfrac{2^4}{5^4} = \dfrac{16}{625}$ $\dfrac{5^5}{-3^5} \times \dfrac{1}{3^4} = \dfrac{5^9}{-3^{5+4}} = \dfrac{5^9}{3^9} = \dfrac{-1325}{19683}$

F. 1. $\left(\dfrac{-2}{3}\right)^{-2} = \left(\dfrac{3}{-2}\right)^2 = \dfrac{3^2}{(-2)^2} = \dfrac{9}{4}$ 2. $\left(\dfrac{3}{-2}\right)^3 = \dfrac{3^3}{(-2)^3} = \dfrac{27}{-8}$

3. $\left(\dfrac{-2}{3}\right)^3 = \dfrac{(-2)^3}{(3)^3} = \dfrac{-8}{27}$ 4. $\left(\dfrac{3}{-2}\right)^{-2}\left(\dfrac{-2}{3}\right)^2 = \dfrac{(-2)^2}{(3)^2} = \dfrac{4}{9}$

G. 1. True, 2. True, 3. False, 4. True, 5. True

Worksheet-13

Scientific Notation of a Rational Number

A. 1. (ii), 2. (iv)

B. 1. 6.38×10^{10} 2. 8.702×10^8

6.38×1000000000 $= \dfrac{8.702}{10^8} = \dfrac{8.702}{100000000}$

$= 63800000000$ $= 0.00000008702$

C. 1. 7380000000

$= 738 \times 10^7$

$= 7.38 \times 10^9$

2. 29730000000

$= 2973 \times 10^7$

$= 2.973 \times 10^{10}$

3. 0.389400000

$= 0.3894 \times 10^{-5}$

$= 3.894 \times 10^{-2} \times 10^{-5}$

$= 3.894 \times 10^{-7}$

4. 0.000076428

$= 76420 \times 10^{-4}$

$= 7.6428 \times 10^{-4} \times 10^{-4}$

$= 7.6428 \times 10^{-8}$

5. 0.00000034

$= .34 \times 10^{-6}$

$= 3.4 \times 10^{-1} \times 10^{-6}$

$= 3.4 \times 10^{-7}$

6. 83000000000

$= 83 \times 10^9$

$= 8.3 \times 10^{10}$

D. 1. 100, 2. 100000

E. 1. False, 2. True, 3. False, 4. True

F. 1. 3.84×108 m, 2. 3.00×108 m/s, 3. 1.2756×107 m, 4. 1.4×109 m,

5. 1.0×1011, 6. 1.2×1010 years, 7. 3.0×1020 m, 8. 6.023×1022,

9. 1.353×109 km3, 10. 1.027×109

Worksheet-14

Ratio and Proportion

A. 1. 1/7, 2. 1/5, 3. 2/9

B. 1. $4:12::1:3$ 2. $5:8::10:y$

C. 1. $\dfrac{8}{x} = \dfrac{4}{5}$

$4x = 8 \times 5$

$4x = 40$

$x = \dfrac{40}{4} = 10$

2. $\dfrac{x}{6} = \dfrac{7}{8}$

$= x \times 8 = 6 \times 7$

$8x = 42$

$x = \dfrac{42}{8} = \dfrac{21}{4}$

3. $\dfrac{6}{7} = \dfrac{7}{14}$

$= 7 \times x = 6 \times 14$

$7x = 84$

$x = \dfrac{84}{7} = 12$

D. 1. (a) 20, (b) 5/7, (c) 1, (d) 2/9, (e) 90%, (f) 0.8, (g) 2/3, (h) 0.75, (i) 1/3, (j) 25%

  2. (a) 7/8, (b) 100, (c) 0.4, (d) 1/2, (e) 66.7%, (f) 0.75, (g) 83.3%, (h) 1/3,
   (i) 0.875, (j) 1/4

E. $A + B = 1250$

  $A : B := 2 : 3$

  $2 + 3 = 5$

  $A = \dfrac{1250}{5} \times 2 = 500$

  $B = \dfrac{1250}{5} \times 3 = 750$

F. Price of 8 m ribbon = ₹ 212

  Price of 1 m ribbon is $212 \div 8 = 26.5$

$$
\begin{array}{r}
8\overline{)212}\,\underline{26.5} \\
-16\downarrow \\
\hline
52 \\
-48 \\
\hline
40 \\
40 \\
\hline
0
\end{array}
$$

  Price of 18 m ribbon $= 18 \times 26.5 = 477$

G. Let the sides of triangle are x, y, z

  $A = x$ cm, $B = 2x$ cm, $C = 3x$ cm

  Perimeter of triangle = 36 cm

    $A + B + C = 36$ cm

  $x + 2x + 3x = 36$

    $6x = 36,\ x = 6$

  $A = 6$ cm

  $B = 2 \times 6 = 12$ cm

  $C = 3 \times 6 = 18$ cm

Worksheet-15

Percentage

A. 1. (i), 2. (i), 3. (iii)

B. 1. $3\% = \dfrac{3}{100} = 0.03$ 2. $2.071\% = \dfrac{2.071}{100} = 207.1$ 3. $50.5\% = \dfrac{50.5}{100} = 5050$

C. 1. $\dfrac{0.16}{100} = 16\%$ 2. $\dfrac{0.93}{100} = 93\%$ 3. $\dfrac{0.8}{100} = 80\%$

D. 1. $\dfrac{5}{9} \times 100 = \dfrac{500}{9} = 55.5\%$

    2. $\dfrac{35}{50} \times 100 = 35 \times 2 = 70\%$

    3. $5\dfrac{2}{3} \times 100 = \dfrac{17}{3} \times 100 = 566.6\%$

E. $\dfrac{150}{100} \times 82 = 15 \times 8.2 = 123$ **F.** $\dfrac{16}{100} \times 50 = \dfrac{16}{2} = 8$

G. $\dfrac{80}{100} \times 18.4 = 8 \times 1.84 = 14.72$ **H.** $\dfrac{6}{100} \times 2500 = 25 \times 6 = 150$

I. 1. $\dfrac{8}{12} \times 100 = \dfrac{800}{12} = 66.6\%$ 2. $\dfrac{4.5}{18} \times 100 = \dfrac{450}{18} = 25\%$

    3. $\dfrac{27}{18} \times 100 = \dfrac{2700}{18} = 150\%$ 4. $\dfrac{3000}{15} \times 100 = 20000\%$

J. $\dfrac{4}{100} \times 625 = 4 \times 6.25 = 25\%$

K. Total question $= 40$

Correctly answered $= 32$

Percentage of correctly answered questions $= \dfrac{32}{40} \times 100 = 80\%$

Worksheet-16

Profit, Loss and Simple Interest

A. 1.   C.P. $= 7282$

       Profit $= 208$

         S.P. $= 7282 + 208 = 7490$ [CP + Profit]

      Profit % $= \dfrac{208 \times 100}{7282} = 2.85\%$ $\left[\dfrac{\text{Profit}}{\text{CP}} \times 100 \right]$

   2.   SP $= 572$

       Profit $= 72$

         CP $= 572 - 72 = 500$ [SP – Profit]

      Profit % $= \dfrac{72}{500} \times 100 = 14.4\%$

3. $\quad$ CP = 9684

$\quad$ Profit = 273

$\quad$ SP = 9684 + 273

$\quad\quad$ = 9957

$\quad$ Profit % $= \dfrac{273}{9684} \times 100$

$\quad\quad$ = 2.819%

4. $\quad$ CP = 6,76,000

$\quad$ Loss = 18,500

$\quad$ SP = 6,76,000 − 18,500 $\quad\quad\quad\quad$ [CP − Loss]

$\quad\quad$ = 6,57,500

$\quad$ Loss% $= \dfrac{18,500}{6,76,000} \times 100$ $\quad\quad\quad$ $\left[\dfrac{\text{Loss}}{\text{CP}} \times 100 \right]$

$\quad\quad$ = 2.736%

5. $\quad$ SP = 7894

$\quad$ Loss = 306

$\quad$ CP = 7894 + 306 $\quad\quad\quad\quad$ [SP + Loss]

$\quad\quad$ = 8200

$\quad$ Loss% $= \dfrac{306}{8200} \times 100$

$\quad\quad$ = 3.73%

B. 1. (i), 2. (iv), 3. (iv), 4. (iv)

C. 1. $\quad$ Profits = ₹ 1800

$\quad$ R = 5%

$\quad$ Time = 1 year

$\quad$ S.I $= \dfrac{P \times R \times T}{100} = \dfrac{1800 \times 5 \times 1}{100} = ₹\,90$

Amount = P + SI = 1800 + 90 = ₹ 1890

2. $\quad$ Profits = ₹ 2600

$\quad$ R = 12%

$\quad$ Time = 3 years

$\quad$ S.I $= \dfrac{P \times R \times T}{100} = \dfrac{2600 \times 12 \times 3}{100} = ₹\,936$

Amount = 936 + 2600 = ₹ 3536

3. $P = ₹\,3125$

   $R = 15\%$

   $T = 73$ days

   $T = 73/365$

   $\text{S.I} = \dfrac{P \times R \times T}{100} = \dfrac{3125 \times 15 \times 73}{100 \times 365} = ₹\,93.75$

   $\text{Amount} = \text{S.I} + P$

   $= 93.75 + 3125$

   $= ₹\,3218.75$

4. $P = ₹\,5660$

   $R = 11\%$

   $T = 9$ months $= \dfrac{9}{12} = \dfrac{3}{4}$

   $\text{S.I} = \dfrac{5660 \times 11 \times 3}{100 \times 4} = ₹\,466.95$

   $\text{Amount} = ₹\,6126.95$

D. $P = ₹\,400$

   $SI = ₹\,78$

   $T = 1\dfrac{1}{2}$ years $= 1.5$

   $R = \dfrac{SI \times 100}{P \times T} = \dfrac{78 \times 100}{400 \times 1.5} = 13\%$

E. $P = ₹\,400$

   $\text{Amount} = ₹\,512$

   $SI = 512 - 400 = 112$

   $R = 14\%$

   $T = \dfrac{SI \times 100}{R \times P} = \dfrac{112 \times 100}{14 \times 400} = 2$ years

F. $\text{Amount} = ₹\,2400$

   $\text{Rate} = 15\%$

   $\text{Time} = 4$ years

   $SI = \dfrac{P \times R \times T}{100}$

   $SI = \dfrac{P \times 15 \times 4}{100} = \dfrac{60P}{100}$

$$\text{SI} = \frac{3P}{5}$$

$$\text{Amount} = P + \text{SI}$$

$$2400 = P + \frac{3P}{5} = \frac{5P + 3P}{5}$$

$$2400 = \frac{8P}{5}$$

$$P = 2400 \times \frac{5}{8}$$

$$P = 300 \times 5$$

$$P = ₹\,1500$$

G. Rajesh borrowed $= ₹\,2000$

Interest $= 8\%$ per annum

Time period $= 6$ years

Given amount $= ₹\,2600$

Cost of watch $= ?$

$$\text{SI} = \frac{P \times R \times T}{100} = \frac{2000 \times 8 \times 6}{100} = ₹\,960$$

Amount $= P + SI$

$$= 2000 + 960 = 2960$$

Cost of watch $= 2960 - 2600 = ₹\,360$

H. 1. CP $= ₹\,320$

SP $= ₹\,400$

gain $= 400 - 320 = 80$

$$\text{gain percent} = \frac{\text{gain}}{\text{CP}} \times 100$$

$$= \frac{80 \times 100}{320} = 25\%$$

2. CP $= ₹\,250$

SP $= ₹\,235$

Loss $= 250 - 235 = 15$

$$\text{Loss percent} = \frac{15}{250} \times 100 \qquad \left[\frac{\text{Loss}}{\text{CP}} \times 100\right]$$

$$= 6\%$$

3.

$$CP = ₹\,300$$

$$Profit = ₹\,75$$

$$Profit\,\% = \frac{75}{300} \times 100$$

$$= 25\%$$

4.

$$CP = ₹\,720$$

$$Loss = ₹\,63$$

$$Loss\% = \frac{63}{720} \times 100$$

$$= 8.75\%$$

Worksheet-17

Basic of Algebraic Expressions

A. 1. x12, 2. $4a^2b^2c^3$, 3. $43p^8q^{12}$

B. 1. a×a×b×b×b×b   2. 2×2×2×a×a×a×b×b×b×b

C. 1. 43, 2. –14a, 3. 5y3

D. 1. $4a + ab$

$$= 4 \times 2 + 2 \times 3$$

$$= 8 + 6$$

$$= 14$$

2. $3a^2 + 2x - y^2$

$$= 3(2)^2 + 2(2) - (-3)^2$$

$$= 3(4) + 4 - 9$$

$$= 12 + 4 - 9$$

$$= 7$$

3. $4xy^2 - 2yz^2 + 4x^2 2$

$$= 4 \times 2 \times (-3)^2 - 2 \times (-3) \times (-2)^2 + 4 \times (2)^2 \times (-2)$$

$$= (8 \times 9) + (6 \times 4) + 16 \times (-2)$$

$$= 72 + 24 - 32$$

$$= 64$$

4. $5x + y^3 + 3xyz + bx$

$$= 5 \times 2 + (-3)^3 + 3 \times 2 \times (-3) \times (-2) + 3 \times 2$$

$$= 10 + (-27) + 36 + 6$$

$$= -17 + 42$$

$$= 25$$

E. 1. (ii), 2. (ii), 3. (iii)

F. 1. 8(x+y), 2. x+y+8, 3. (b+c)–a, 4. a/b +ab

Worksheet-18

Operations on Algebraic Expressions

A. 1. (ii), 2. (ii), 3. (iii), 4. (ii), 5. (iii)

B. 1. $12P - 8P = 4P$ 2. $7a - 3a = 4a$

C. 1. $12a^2y - 8a^2y - 13a^2y - 14a^2y$
$= 12a^2y - 21a^2y - 14a^2y$
$= 12a^2y - 35a^2y$
$= 23a^2y$

2. $16ab - 7ab - 10ab - 9ab$
$= 16ab - 17ab - 9ab$
$= 16ab - 26ab$
$= -10ab$

3. $-7mn - 10 - 12mn - 2 - 9mn + 27$
$= -19mn - 12 - 9mn + 27$
$= -28mn + 15$
$= 15 - 28mn$

4. $4xyz - 3xyz - 7xyz$
$= xyz - 7xyz$
$= -6xyz$

D. 1.
$$\begin{array}{r} 8x^2 - 3y^2 \\ -5x^2 + y^2 \\ \hline 3x^2 - 4y^2 \end{array}$$

2.
$$\begin{array}{r} 14a^2 - 7ab \\ -11a^2 - 8ab \\ \hline 3a^2 + ab \end{array}$$

E. $P = 4x^3 + 3x^2 - 4x + 5$
$$\begin{array}{r} Q = 6x^3 + 5x^2 + 4x - 2 \\ +10x^3 + 8x^2 - 3 \\ \hline \end{array}$$
$P + a = 10x^3 + 8x^2 - 3$
$$\begin{array}{rl} (P + a) - R &= 10x^3 + 8x^2 - 3 \\ &= -6x^3 - 4x^2 + 3 \\ \hline & 4x^3 + 12x^2 + 0 \end{array}$$
$(P + Q) - R = 4x^3 + 12x^2$

F. $= 7x^2yz^3 \times 46xy^2z^3$
$= (-7x^2 \times 46x^1) \times (y^1 \times y^2) \times (z^3 \times z^3)$
$= -322x^{(2+1)} \times y^{1+2} + z^{3+3}$
$= -322x^3y^3z^6$

Worksheet-19

Solution of Linear Equations

A. 1. (iv), 2. (i), 3. (iv)

B. 1. 2x cm, 2. x + 2x, 3. x + 2x =60, 4. x =20

C. 1. $5x = 2x + 7$
$= 5x - +2x = 7$
$= 3x = 7$
$x = \dfrac{7}{3}$

2. $5x = 8 + 3x$
$= 5x - 3x = 8$
$= 2x = 8$
$= x = \dfrac{8}{2} = 4$

3. $2x = 12 - 4x$

 $6x = 12$

 $x = \dfrac{12}{6} = 2$

 $x = 2$

D. An equation between two variables that gives a straight line when plotted on a graph.

E. To perform same operation on both sides of formula.

F. $\dfrac{9}{5}x = \dfrac{18}{5}$

 $= \dfrac{\cancel{9}}{\cancel{5}}x = \dfrac{\cancel{9}}{\cancel{5}} \times 2$

 $x = 2$

Worksheet-20

Application of Linear Equations

A. 1. (iii), 2. (iii), 3. (ii), 4. (ii), 5. (iii)

B. 1. add, 2. equation, 3. 42, 4. solution, 5. 55

C. 1. $7x = 13x - 12$

 $7x - 13x = -12$

 $-6x = -12$

 $x = 2$

2. According to questions

 let x be the doneted money

 $x + (x + 125) = 975$

 $2x + 125 = 975$

 $2x = 975 - 125$

 $2x^2 = 850$

 $x = \dfrac{850}{2} = 425$

 $= ₹425$

3. Let the number be x

 $45 + \dfrac{1}{2}x = 3x$

 $3x - \dfrac{x}{2} = 45$

 $= 6x - x = 90$

 $5x = 90$

 $x = \dfrac{90}{5} = 18$

4.   Travelled by train $= \dfrac{2x}{5}$km

      Travelled by bus $= \dfrac{x}{3}$km

      Travelled by car $= \dfrac{x}{4}$km

      Travelled by foot $= 3$ km

$$= \left(\dfrac{2x}{5} + \dfrac{x}{3} + \dfrac{x}{4} + 3 \right) = x$$

    L.C.M. of 5, 3, 4 is 60

$$= \dfrac{24x + 20x + 15x + 180}{60} = x$$

$$59x + 180 = 16x$$

$$59x - 60x = -180$$

$$-x = -180$$

$$x = 180 \text{ km}$$

5. Let x be the age of girl and her father according to question

$$x + (x + 28) = 50$$

$$x + x + 28 = 56,\ 2x = 50 - 28$$

$$2x = 22$$

$$x = \dfrac{22}{2}$$

$$x = 11$$

Age of girl $= 11$ years

Age of her father $= (11 + 28) = 39$ years

Worksheet-21

Pairs of Angles

A. 1. (i), 2. (i), 3. (iii), 4. (iii), 5. (iii)

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

C. 1. 90°, 2. 180°, 3. supplementary, 4. linear pair, 5. obtuse

D. 1. $z + 55° = 180°$ (linear pair)

    $z = 180° - 55°$

    $z = 125°$

z and *y* are vertical angles

$\angle z = \angle y$

$\angle y = 125°$

x and 55° are vertical angles

So, $\angle x = 55°$

2. $40° + x + 25° = 180°$ (linear pair)

$\Rightarrow \quad 65° + x = 180°$

$\Rightarrow \qquad x = 180° - 65°$

$\Rightarrow \qquad x = 115°$

Now, $40° + y = 180°$ (linear pair)

$\quad y = 180° - 40°$

$\quad y = 140°$

Now, *z* and 40° are vertical pair angles

So, $z = 40°$

Worksheet-22

Parallel Lines and Transversal

A. 1. (iv), 2. (i), 3. (i), 4. (ii), 5. (ii), 6. (ii)

B. 1. $\angle a = \angle g$, $\angle n = \angle b$, $\angle c = \angle e$, $\angle f = \angle d$

2. $\angle a = \angle c$, $\angle n = \angle f$, $\angle g = \angle e$, $\angle b = \angle d$

3. $\angle b = \angle f$, $\angle g = \angle c$

4. $\angle a = \angle e$, $\angle n = \angle d$

5. $\angle a + \angle n$, $\angle b + \angle g$, $\angle c + \angle f$, $\angle e = \angle d$

6. $\quad a + h = 180°$

$140° + h = 180°$

$\qquad h = 180° - 140°$

$\qquad h = 40°$

$\angle a = \angle g$ [vertical angles]

$\angle g = 140°$

$\angle h = \angle b$ [pair of vertical angle]

$\angle b = 40°$

$\angle a = \angle c$ [corresponding angles]

$\angle c = 140°$

$\angle f = \angle h$ [corresponding angles]

$\angle f = 40°$

$\angle c = \angle e$ [vertical angles]

$\angle e = 140°$

Now, $\angle d = \angle f$ [vertical angles]

$\angle d = 40°$

C. 1. $\angle 2 = 45°$, $\angle 3 = 45°$; $\angle 6 = 45°$, $\angle 7 = 45°$; $\angle 4 = 135°$, $\angle 8 = 135°$

     2. $\angle 1 = 80°$, $\angle 2 = 100°$

Worksheet-23

Triangles and Their Properties

A. 1. (iv), 2. (i), 3. (iii)

B. 1. exterior, 2. altitude, 3. cannot, 4. one

C. 1. False, 2. False, 3. True, 4. False, 5. False, 6. True

D. 1.
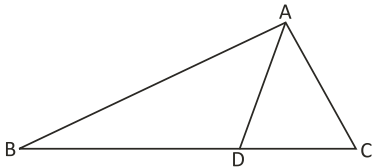
$\Delta\, ADC$

     $\angle C + 60° + 70° = 180°$ (Angle sum properly)

$\Rightarrow \angle C + 130° = 180°$

$\Rightarrow \angle C = 180° - 130°$

$\Rightarrow \angle C = 50°$

     $\angle C + \angle B = 180°$ (linear pair)

$\Rightarrow \angle B = 180° - 50° = 130°$

     $\Delta\, ABD$

$\Rightarrow \angle a + \angle b + 30° = 180°$

$\Rightarrow \angle a + 160° = 180°$

$\Rightarrow \angle a = 180° - 160°$

$\Rightarrow \angle a = 20°$

Hence, required values are $a = 20°$, $b = 130°$, $c = 50°$

2.
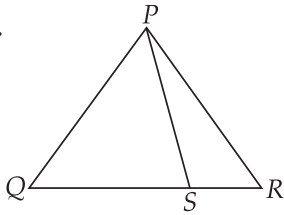
In $\triangle PQS$ we have

$\angle a + 60° + 55° = 180°$ (angle sum properly)

$\Rightarrow$ $\angle a + 115° = 180°$

$\Rightarrow$ $\angle a = 180° - 115°$

$\Rightarrow$ $\angle a = 65°$

    $\angle a + \angle b = 180°$ (liner pair)

$\Rightarrow$ $65° + \angle f = 180°$

$\Rightarrow$ $\angle b = 180° - 65°$

$\Rightarrow$ $\angle b = 115°$

In $\triangle PSR$ we have

$\angle b + \angle c + 40° = 180°$ (angle sum properly)

$\Rightarrow$ $115° + \angle c + 40° = 180°$

$\Rightarrow$ $\angle c + 115° = 180°$

$\Rightarrow$ $\angle c = 25°$

Hences, required values are $a = 65°, b = 115°, c = 25°$

E. $\angle x = \angle y + 30°$

    $\angle z = 90°$

In $\triangle XYZ$

$\angle x + \angle y + \angle z = 180°$ (angle sum property)

$\angle y + (\angle y + 30°) + 90° = 180°$

$2y + 120° = 180°$

$2y + 180° - 120° = 60°$

$2y = 60°$

$\angle y = \dfrac{60°}{2} = 30°$

$\angle y = 30°$

Congruent Figures

A. 1. (iii), 2. (iii), 3. (ii), 4. (i)

B. 1. PQ, 2. degree measure, 3. angles

C. 1. True, 2. True, 3. False, 4. True, 5. False, 6. True, 7. False, 8. True, 9. False, 10. True, 11. True, 12. True, 13. True, 14. True

Symmetry

A. 1. (iv), 2. (iii), 3. (iii), 4. (i)

B. 1. 1, 2. 2, 2 ; 3. Isosceles, 4. , 5. M and W

C. 1. 4, 2. 3, 3. 2

D.

Shape	Centre of Rotation	Order of Rotation	Angles
Square	Intersecting point of diagonal	4	90°
Rectangle	Intersecting point of diagonal	2	180°
Rhombus	Intersecting point of diagonal	2	180°
Equilateral triangle	Intersecting point of median	3	120°
Regular Hexagon	Intersecting point of diagonal	6	60°
Circle	Centre	Infinite	At every point
Semi-Circle	Mid point of diameter	1	360°

Representing 3D in 2D

A. 1. (iv), 2. (i), 3. (ii), 4. (iv)

B. 1. 12, 2. sphere, 3. 1, 4. no, 5. 5

C.

2 cm
3 cm
5 cm
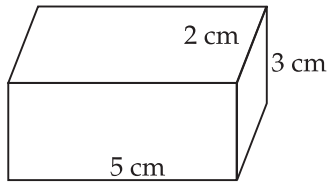
Three different isometric slectches are :

D.

Top
Side
Front
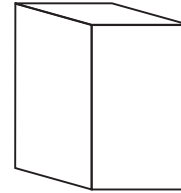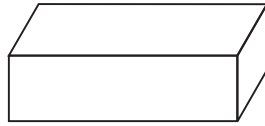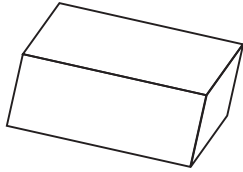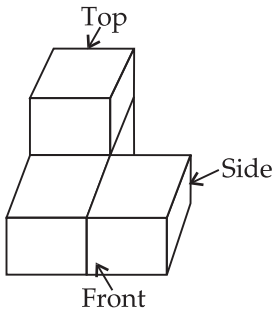
Construction

A. 1. (ii), 2. , 3. (ii), 4. (i)

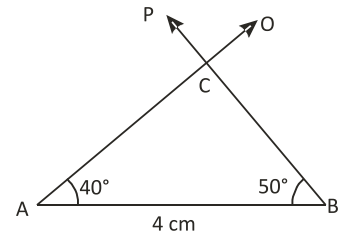**B.** 1. 60°, 2. hypotenuse, 3. 45°, 4. less than 90°

C.
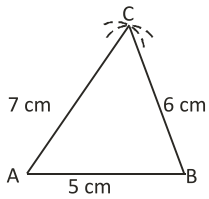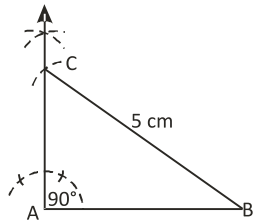
| SSS Criterion | RHS Criterion | SAS Criterion | ASA Criterion |
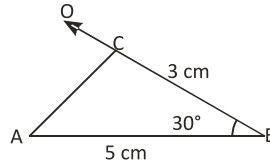
Perimeter

A. 1. (iii), 2. (ii), 3. (iv), 4. (iii)

B. 1. True, 2. True, 3. True

C. 1. Perimeter = adding all the sides values

Perimeter = 1.5 + 3.5 + 3.5 + 1.5 + 1 + 1.5 = 12.5

2. Perimeter of square = 4 × side

$$= 4 \times 7\frac{1}{7}$$

$$= 28\frac{1}{4} \text{ m}$$

3. Perimeter of triangle = add all three sides

Perimeter = 2.3 + 8 + 8.6

= 18.9 cm

4. Perimeter of rectangle = $2(l + b)$

$$= 2\left(20\frac{1}{2} + 39\frac{2}{3}\right)$$

$$= 2\left[\frac{41}{2} + \frac{119}{3}\right]$$

$$= 2\left[\frac{123 + 238}{6}\right]$$

$$\Rightarrow \qquad \frac{361}{3} = 120\frac{1}{3}$$

D. 1. $C = 2\pi r$

$C = 2 \times 3.14 \times 52$

$= 326.56 \text{ cm}$

2. $C = 2\pi r$

$C = 2 \times 3.14 \times 96$

$= 602.88 \text{ cm}$

3. $C = 2\pi r$

$C = 2 \times 3.14 \times 40$

$= 251.2 \text{ cm}$

4. $C = 2\pi r$

$C = 2 \times 3.14 \times 34$

$= 213.52 \text{ cm}$

E. 1. $C = 24$ cm

$C = \pi d, d = \dfrac{c}{\pi}$

$$= \frac{24}{3.14} = 7.64 \text{ cm}$$

2. $C = 42$ cm

$$d = \frac{42}{3.14} = 13.37 \text{ cm}$$

3. $C = 84$ cm

$$d = \frac{84}{3.14} = 26.75 \text{ cm}$$

4. 36.4 cm

$$d = \frac{36.4}{3.14} = 11.59 \text{ cm}$$

F. 1. First perimater of rectangle $= 2(l + b)$

$$= 2(38 + 24)$$

$$= 124 \text{ cm}$$

Now circum of circle $= \pi\Delta = 3.14 \times 24$

75.36 cm

Perimeter of Figure = 124 + 75.36 = 199.36 cm

2. $\quad$ Radius of quadrant $= 31$ m

$$\text{Perimeter of given shapes} = \frac{1}{2}\pi 31 + 2(31)$$

$$= \frac{1}{\cancel{2}} \times \frac{22^{11}}{7} \times 31 + 2 \times 31$$

$$= \frac{341}{7} + 62$$

$$= 48.71 + 62 = 110.71$$

3. Total perimeter = Perimeter of triangle + Perimeter of semicircle

$\quad$ Primeter of triangle sum of all sider $= 14 + 21 + 21 = 56\,cm$

$$\text{Perimeter of semicircle} = 17 \times 7 + 14$$

$$= \frac{22}{\cancel{7}} \times \cancel{7} + 14$$

$$= 22 + 14 = 36\,cm$$

$$\text{Total perimeter} = (56 + 36)\,cm$$

$$= 92\,cm$$

4. $\quad$ Total perimeter $= 2\pi r \dfrac{1}{2}\pi r + 2r$

$$= 2 \times \frac{22}{7} \times 3.1 - \frac{1}{2} \times \frac{22}{7} \times 3.1 + 2 \times 3.1$$

$$= 19.46 - 4.8 + 6.2$$

$$= 25.66 - 4.8 = 20.86\,m$$

Worksheet-29

Area

A. 1. (i), 2. (iv), 3. , 4. (ii), 5. (i), 6. (iii)

B. 1. $l = 4cm, b = 5cm$

$\quad$ area of rectangle $= l \times b$

$$= (4 \times 5)cm$$

$$= 20\,cm^2$$

2. $l = 9m, b = 7cm$

$$= l \times b$$

$$= (9 \times 7)\,cm$$

$$= 63\,cm^2$$

3. $l = 12.6\,cm, b = 4.8\,cm$

$$= l \times b = (12.6 \times 4.8)cm^2$$

$$= 60.48\,cm^2$$

4. $l = 3.5\,cm, b = 4.5\,cm$

$$= l \times b = (3.5 \times 4.5)cm^2$$

$$= 15.75\,cm^2$$

C. 1. $a = 5\,cm$

$\quad$ Area of square $= a^2$

$$(5 \times 5)cm^2 = 25cm$$

2. 7 cm

Area of square $= (7 \times 7)cm^2$

$\qquad = 49 cm^2$

3. 3.6 cm

Area of square $= (3.6 \times 3.6)cm^2$

$\qquad = 12.96 cm^2$

4. 2.5 cm

Area of square $= (2.4 \times 2.4)\, cm^2$

$\qquad = 5.76\, cm^2$

D. 1. dianmeter (d) = 24 cm

Area of circle $= \pi r^2$

$r = \dfrac{d}{2} = \dfrac{24}{2} = 12$ cm

Area of circle $= 3.14 \times (12)^2$

$\qquad = 452.16\, cm^2$

2. d = 84 cm

$r = \dfrac{84}{2} = 42$ cm

Area of circle $= \pi r^2$

$\qquad = 3.14 \times (42) \times 42$

$\qquad = 5538.96\, cm^2$

3. d = 42 cm

$r = \dfrac{42}{2} = 21 cm$

Area $= 3.14 \times 21 \times 21$

$\qquad = 1384.74\, cm^2$

4. d = 205 cm

$r = \dfrac{205}{2} = 102.5$ cm

Area $= 3.14 \times (102.5)\,(102.5)$

$\qquad = 32.989$ cm

E. 1.
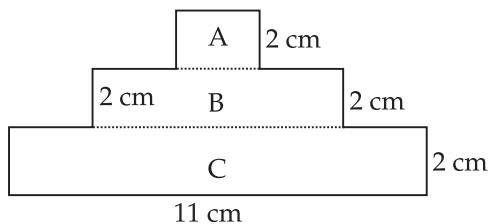
Area of square $A = 2 \times 2 = 4 cm^2$

Area of square $B = 6 \times 2 = 12 cm^2$

Area of square $C = 11 \times 2 = 22 cm^2$
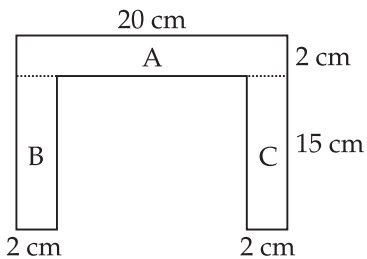
Total area $= (4 + 12 + 22)cm^2$

$\qquad = 38\, cm^2$

2.
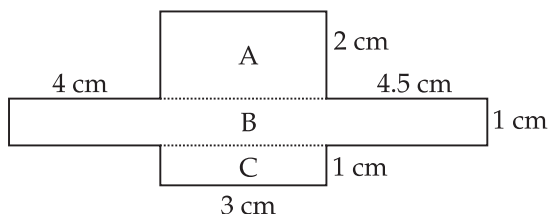
Area of rectangle $A = 3 \times 2 = 6\,cm^2$

Area of rectangle $B = (4 + 4.5 + 3)\,cm \times 1\,cm$

$$= (11.5 \times 1)\,cm^2 = 11.5\,cm^2$$

Area of rectangle $C = 1 \times 3 = 3\,cm^2$

Total area $= (6 + 11.5 + 3)\,cm^2$

$$= 20.3\,cm^2$$

3.

Area of rectangle $A = 20 \times 2 = 40\,cm^2$

Area of rectangle $B = 14 \times 2 = 28\,cm^2$

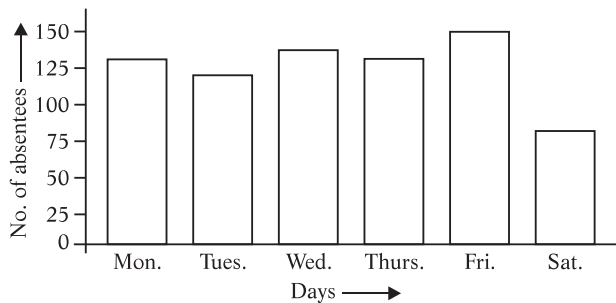Area of rectangle $C = 14 \times 2 = 28\,cm^2$

Total area $= (40 + 28 + 28)\,cm^2$

$$= 96\,cm^2$$

Worksheet-30

Bar Graph

A. 1. December or Oct. , 2. September, November, December, Jan, Feb. , 3. 30
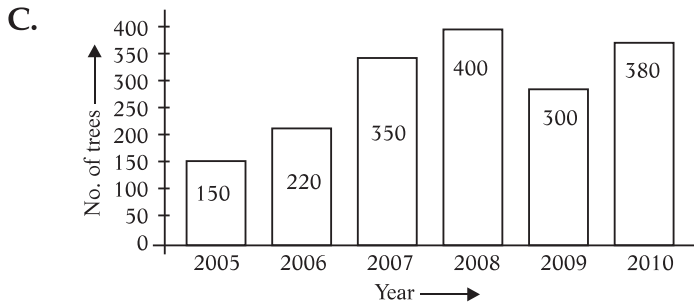
B.

1. Maximum students were absent in Friday and minimum students were absent in Saturday

2. No. of absentees in Wed. = 135

   No. of absentees in Fri. = 150

3. Monday and Thursday.

C.

Year →

Probability, Mean, Median and Mode

A. 1. , 2. (iv), 3. (iii), 4. (iv), 5. (iii)

B. 1, 7, 9, 11, 16, 16, 16, 51, 81, 101, 126

$$\text{Mean} = \frac{\text{total runs score}}{\text{No. of player}}$$

$$\text{Mean} = \frac{430}{11} = 39.9$$

$$\text{Mediam} = \left(\frac{m+1}{2}\right) = \frac{40}{2} = 20$$

$$\text{Mode} = 16$$

C. 33, 36, 38, 39, 43, 43, 44, 44, 46, 51

$$\text{Mean} = \frac{417}{10} = 41.7$$

Mode = 43, 44

D. 30 is the mode of the given data because 13 students got this result.

E. 20

F. 1. 28, 2. 17.5, 3. 47, 4. 10

G. Case I : Getting a tail in a toss of a coin.

Science–7

Food

A. 1. In potato-tuber, in ginger-rhizome
2. This is because of formation of fungus, dough smells foul.
3. These are replenished by some microorganisms and also by death of certain plants.
4. Leaves allow sunlight and carbon dioxide to enter through it which is needed in process of photosynthesis.

B. 1. (b), **2.** (c), **3.** (b)

C.
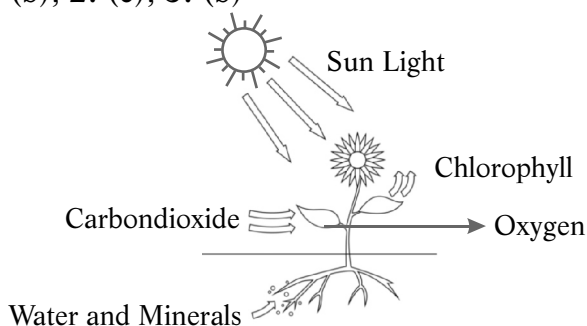
Diagram Showing Photosynthesis

Food

A. 1. Parasite, **2.** Saprophyte, **3.** Autotroph, **4.** Symbiosis

B. 1. (iii), **2.** (iv), **3.** (i), **4.** (v), **5.** (ii)

C. 1. Trees — autotroph, **2.** Fish — heterotroph, **3.** Mosquito — heterotroph, **4.** Mushroom — saprophyte

Nutrition in Animals and Humans

A. 1. (iii), **2.** (ii), **3.** (iv), **4.** (v), **5.** (vi), **6.** (i)

B.

Animal	Kind of Food	Mode of Feeding
Snail	Leaves and insect	Scraping
Ant	Food particles	Chewing
Eagle	Small animals	Capturing and swallowing
Butterfly	Nectar of flowers	Siphoning
Mosquito	Blood	Sucking
House fly	All most everything	Siphoning

C. 1. Process of consuming proper amount of nutrients or energy.

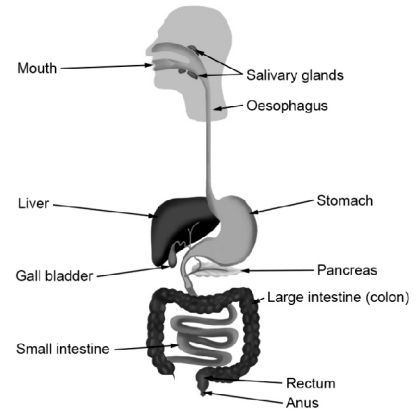**2.** Assimilation is the movement of digested food molecules into the cells of the body where they are used. For example– glucose is used in respiration to provide energy.

D. Diagram of Alimentary canal is aside :

Worksheet-2B

Nutrition in Animals and Humans

A. 1. digestion, **2.** lichen, **3.** pitcher plant, **4.** nutrition, **5.** symbiosis.

B. 1. Leaves, **2.** oral dehydration solution, **3.** pseudo podia, **4.** four-chember stomach, **5.** chlorophyll

C. 1. (iii), **2.** (i), **3.** (ii), **4.** (iv)

Worksheet-3A

Fibre to Fabric : Animal Fibres

A. 1. True, **2.** False, **3.** True, **4.** True, **5.** False

B. 1. Sericulture, **2.** Silkworm, **3.** Mulberry, **4.** Cocoon

C. Do yourself.

D.
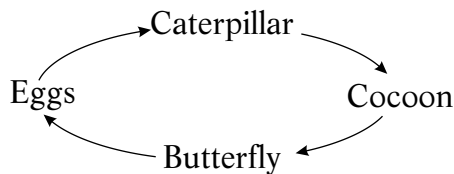
Worksheet-3B

Fibre to Fabric : Animal Fibres

A. 1. Lustrous, **2.** To kill lice and protect body from catching any disease, **3.** Cotton, **4.** Wool

B. 1. Wool, silk; **2.** rearing, worm; **3.** thick hair on body; **4.** air, conductor

C.

Worksheet-4A

Heat

A. 1. A breeze blowing towards sea from land especially at night.

  2. The sensation of something hot is known as heat.

B. 1. (iv), **2.** (iii), **3.** (ii), **4.** (i)

C. Do yourself.

D. 1. This is because jute sack is a insulator of heat and slows down melting of ice.
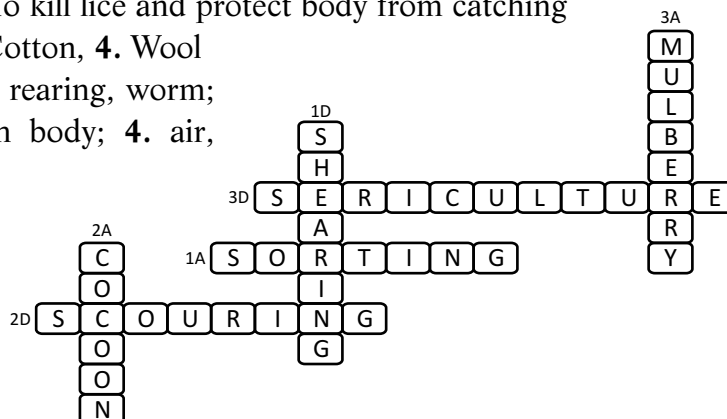
  2. This is because mercury absorb heat energy due to which they apply a greater force and moves away from each other.

Worksheet-4B

Heat

A. 1. False, **2.** True, **3.** True, **4.** True, **5.** True

B. 1. 98.7°F, **2.** wood, rubber; **3.** copper, iron; **4.** light, **5.** dark

C. Clinical Thermometer :

  1. These are thermometer which are used in daily life.

  2. These are of small size.

  3. The range of clinical thermometer is about 35°C to 42°C.

  Laboratory Thermometer :

  1. Thermometer which are used in lab are known as laboratory thermometer.

  2. These are of bigger size as compared to that of clinical thermometer.

  3. It ranges from 0°C to 100°C.

Worksheet-5A

Acids, Bases and Salts

A. 1. curd, vinegar, lemon juice, window cleaner

  2. soap, lime water

  3. common salt, sugar

B. 1. Methyl orange and phenolphthalein, **2.** Bitter in taste, **3.** Acetic acid, citric acid

C. 1. sour, acid; **2.** natural; **3.** pink; **4.** neutralise, salt

Worksheet-5B

Acids, Bases and Salts

A. 1. sour, **2.** bitter, **3.** Lichen, **4.** phenolphthalein, **5.** neutral

B. 1. (ii), **2.** (i), **3.** (iv), **4.** (v), **5.** (iii)

C. 1. No change, **2.** No change, **3.** No change, **4.** Red, **5.** Red, **6.** No change, **7.** Red,

  8. No change

D. Do yourself.

Worksheet-6A

Physical and Chemical Changes

A. **1.** (d), **2.** (d), **3.** (c), **4.** (d), **5.** (b)

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

C. **1.** When carbon dioxide is passed through lime water formation of calcium carbonate takes place which make lime water milky.

   2. This is because of production of carbon dioxide gas.

Worksheet-6B

Physical and Chemical Changes

A. **1.** physical, **2.** reversible, **3.** physical, **4.** rusted, **5.** chemical, substance

B. **1.** physical, **2.** freezing, **3.** chemical, **4.** rusting, **5.** crystallisation

C. **Physical Change : 1.** Change in physical property of a substance.
   2. Generally reversible, **3.** Example— tearing of paper
   Chemical Change : 1. Change in chemical property of a substance.
   2. Generally irreversible, **3.** Example— ripening of fruit.

Worksheet-7A

Weather, Climate and Adaptations of Animals to Climate

A. **Penguin**
   1. Have streamlined body to experience minimum resistance in water.
   2. Keep high body temperature to remain active.
   Polar Bear
   1. Hind feet and legs are held flat and used as rudder.
   2. Thick layer of fat to keep them warm while swimming.

B. **1.** Climate, **2.** Thermometer, **3.** Humidity

C. **1.** (iv), **2.** (ii), **3.** (i), **4.** (iii)

D. **1.** **Weather –** short term state of atmosphere at a particular time and place.
   Climate – Long term manifestation of weather in an area or country.
   2. **Humidity –** Amount of water vapour present in air.
   Rainfall – Amount of rain that falls on a single occasion.

Worksheet-7B

Weather, Climate and Adaptations of Animals to Climate

A. **1.** Temperature above 40°C, **2.** Humid weather, **3.** Temperature about 20°C,
   4. Temperature less than 5°C, **5.** Minimum temperature of a day

B. **1.** True, **2.** True, **3.** False

C. **1.** temperature and pressure, **2.** weather forecasting, **3.** meteorology, meteorologist
   4. penguin
D. **1.** (v), **2.** (iii), **3.** (i), **4.** (ii), **5.** (iv)

Worksheet-8A

Wind, Storms and Cyclones

A. **1.** (a), **2.** (d), **3.** (d)
B. **1.** lighter, **2.** increased, **3.** destructive, **4.** uneven, **5.** more
C. **1.** yes, **2.** no, **3.** yes, **4.** yes, **5.** no, **6.** yes

Worksheet-8B

Wind, Storms and Cyclones

A. **1.** The lowest level of atmosphere of earth characterised by flow of air is called troposphere.
   2. Pressure caused by atmosphere above an area.
   3. Storm consisting of thunder and lightening produced by cloud.
   4. System of wind rotating around center of low atmospheric pressure.
B. **1.** wind, **2.** eye, **3.** Tornado, **4.** anemometer, **5.** isolated tree.
C. **1.** (iii), **2.** (i), **3.** (ii), **4.** (iv)
D. **1.** Air comprises of various gases, i.e., nitrogen, oxygen, carbon dioxide, water vapour, etc.
   2. Biosphere.
   3. It is known as eye.
   4. It is a dark funnel shaped cloud that reaches ground from the sky.

Worksheet-9A

Soil

A.
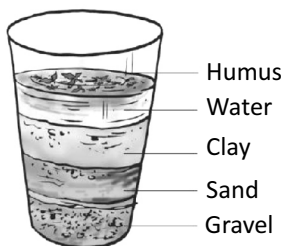
Layers of soil

B. **1.** Soil, **2.** Hydrocarbon, solvents, metal pollutants,
   3. Brown-black material formed by decay of plants and animals is known as humus.
   4. Pedogenesis, **5.** Loam soil
C.
$$\text{Rate of percolation} = \frac{\text{Amount of water}}{\text{Percolation time}}$$

D. **1.** humus, **2.** afforestation, **3.** soil erosion, **4.** weathering

Soil

A. 1. Sandy Soil, **2.** Clayey Soil, **3.** Sandy Soil, **4.** Loamy Soil, **5.** Leaching

B. Percolation rate or rate of percolation $= \dfrac{300}{25} = 12$ ml/min

C. 1. (iv), **2.** (i), **3.** (v), **4.** (iii), **5.** (ii)

D. 1. Bedrock, because the rest are horizon but bedrock is layer of undisturb rock beneath soil layer.
   2. Humus, because the rest are types of soil.

Respiration in Organisms

A. 1. cellular, **2.** inhalation, **3.** spiracles, **4.** diaphragm, **5.** breathing

B. 1. Skin and lungs, **2.** leaves, **3.** With help of gills, **4.** Metabolic process that convert sugar to acid.

C. Respiration : 1. It is a chemical process. **2.** It is a complex process. **3.** Oxygen breakdown glucose to generate energy. **4.** It generates energy. **5.** It is of two types : aerobic and anaerobic
Breathing : 1. It is a physical process. **2.** Include inhalation and exhalation. **3.** Oxygen is inhaled and carbon dioxide is exhaled. **4.** It does not generate energy. **5.** It is not classified further.

Respiration in Organisms

A. 1. chest, **2.** anaerobic, **3.** yeast, **4.** alcohol, **5.** slows down

B. 1. (iii), **2.** (iv), **3.** (v), **4.** (i), **5.** (ii)

C. 1. skin, **2.** trachea, **3.** lungs and skin, **4.** stomata, **5.** gills, **6.** lungs

Transportation in Animals and Plants

A. 1. oxygen, **2.** Arteries, **3.** Urea, **4.** ammonia, **5.** uric acid

B.
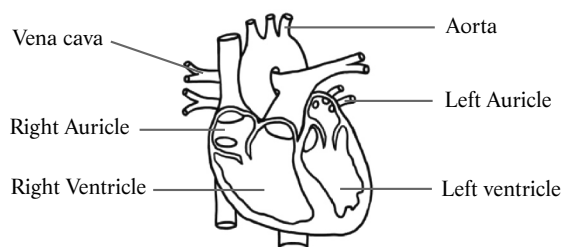
Sections of human heart

C. **1.** Xylem and Phloem,
2. RBCs, WBCs, Blood platelets
3. Transpiration

Worksheet-11B

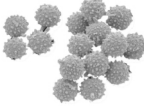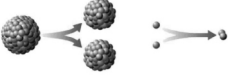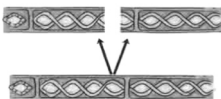### Transportation in Animals and Plants

A. Arteries, veins, veins, Arteries, Arteries, veins, Arteries, Veins

B. **1.** (iii), **2.** (iv), **3.** (i), **4.** **(**v), **5.** (ii)

C. **Transpiration**

Transpiration is the process by which plants absorb and distribute water through their roots and release water vapour through their leaves by moving the water up through the stem, and then the leaves release that moisture by evaporation.

Worksheet-12A

Reproduction in Plants

A.

 Budding

 Binary Fission

 Regeneration

 Fragmentation

B. **1.** Pollination, because it is mode of sexual reproduction.
2. Bryophyllum, because it reproduce sexually.
3. Tissue culture, because others are categories of vegetative propagation.

C. Fertilization in flowering plants happens through a process called pollination occurs when pollen grains from the anther land on a stigma. Fertilization occurs when one of the sperm cells fuses with the egg inside of an ovule. After fertilization occurs, ovule developed into a seed.
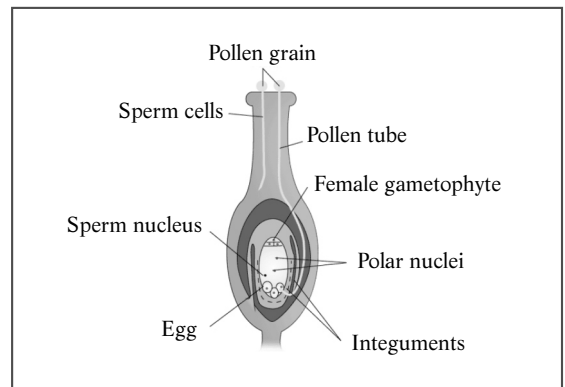
Reproduction in Plants

A. 1. reproduction, **2.** bisexual, **3.** pollination, **4.** flowers, **5.** vegetative
B. 1. (iv), **2.** (i), **3.** (viii), **4.** (vii), **5.** (vi), **6.** (v), **7.** (iii), **8.** (ii)
C. 1. Reproduction through spore formation.
    2. Rice, as it reproduce sexually.
    3. A branch.

Motion and Time

A. second < minutes < hour < day < month < year.
B. Do yourself.
C. Number of oscillations = 20
    Time taken = 10 sec
    Time period of the pendulum = Time taken/No. of oscillations
    Time period of the pendulum = 1/2 = 0.5 sec.
D. 1. Circular motion, **2.** Speed, **3.** Clock, **4.** Uniform motion, **5.** Distance = speed × time

Motion and Time
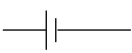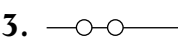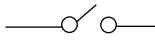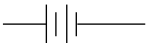
A.

Distance (m)	0	4	**8**	12	**16**	20
Time (s)	0	2	4	**6**	8	10

B. 1. 30 kg, **2.** 50 kg
C. 1. ms^{-1}, **2.** Distance, **3.** Pendulum
D. 1. (v), **2.** (i), **3.** (iv), **4.** (ii), **5.** (iii)

Electric Current and Its Effects

A. 1. ⊣⊢ **2.** (symbol) **3.** �⟩

    4. (switch symbol) **5.** ⊣‖‖⊢ **6.** ———

B. 1. (ii), **2.** (v), **3.** (iv), **4.** (i), **5.** (iii)
C. 1. battery, **2.** electric resistor, **3.** electromagnet, **4.** Hand Christian Oersted; **5.** heating
D. 1. (a), **2.** (b), **3.** (c)

Light

A. 1. straight, **2.** virtual, **3.** plane, **4.** real, **5.** convex

B. Concave lens : 1. Form virtual image, **2.** Image formed is erect, **3.** Image is formed on same side of lens

Convex lens : 1. Form both virtual real image, **2.** Image is inverted, **3.** Image is formed on opposite side of lens.

C. 1. True, **2.** True, **3.** True, **4.** False

D. Ray of light ML is inclined on side of prism AB which travels along line OL and further reflects as OP. When white light passes through a glass prism, it spreads out into a band of different colours called the spectrum of light. The colours in the spectrum are violet, indigo, blue, green, yellow, orange and red.
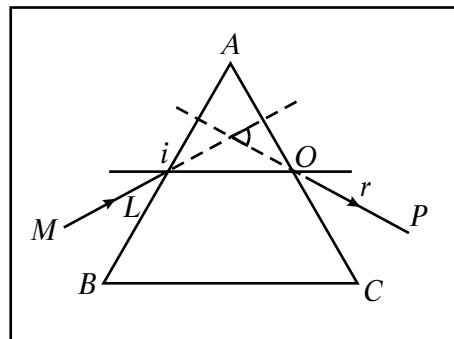
Water : A Precious Resource

A. 1. water, **2.** 72, **3.** Johads, **4.** (i) solid, (ii) liquid, (iii) gas; **5.** wastage

B. 3. Turn off tap while not in use.

    4. Collect rain water for household purpose.

    5. Adequate amount of water to be taken for drinking.

    6. Use a low flow shower head faucet aerators.

    7. Use drip irrigation system.

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

D. 1. Process of seeping water into empty spaces of ground.

    2. It is level below which ground is saturated with water.

Forests : Our Lifeline

A. 1. (d), **2.** (c), **3.** (c), **4.** (c), **5.** (c)

B. 1. Gum, **2.** Medicine, **3.** Wood, **4.** Paper, **5.** Fruits and Vegetables

C.
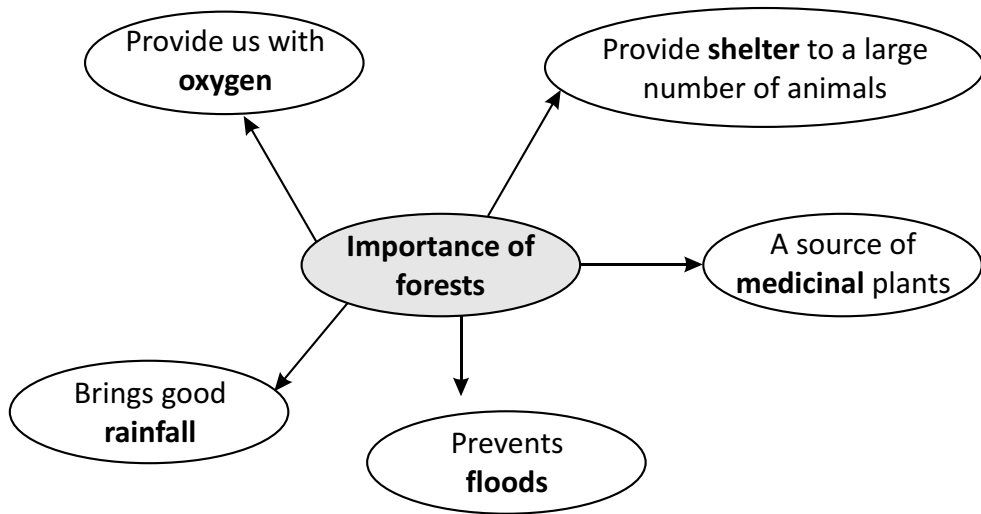
Wastewater Story

A. **1.** waste water, **2.** sludge, **3.** sewer, **4.** ozone, **5.** chlorine, **6.** sewage, **7.** urea, **8.** contaminants, **9.** eucalyptus.

W	A	S	T	E	W	A	T	E	R	P	X
H	U	E	V	Y	U	S	M	Q	J	P	D
J	T	W	B	J	P	E	D	K	O	K	G
K	E	A	H	C	H	L	P	R	I	N	E
K	D	G	J	P	P	A	Q	T	U	O	J
U	R	E	A	O	K	S	L	U	D	G	E
J	A	H	K	L	L	I	F	G	U	B	M
C	O	N	T	A	M	I	N	A	N	T	S
J	Z	G	H	N	I	D	V	Y	J	S	E
O	O	V	K	G	N	F	R	P	B	F	W
H	N	J	Y	R	T	W	Q	I	U	X	E
X	E	U	C	A	L	Y	P	T	U	S	R
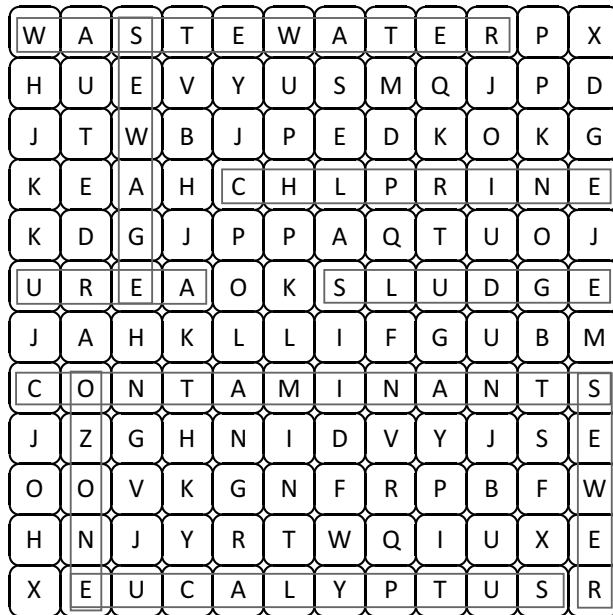
B. "Save water, save life"

C. **1.** (iv), **2.** (i), **3.** (v), **4.** (ii), **5.** (iii)

Social Science–7

Worksheet-1

History : When, Where and How

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

B. 1. Minhaj-i-Siraj, **2.** Indian poets, **3.** rich people, rulers, monasteries; **4.** libraries, archives; **5.** scribes

C. 1. (iv), **2.** (iii), **3.** (i), **4.** (v), **5.** (ii)

Worksheet-2

King and Kingdoms in the Early Medieval Period

A. 1. (v), **2.** (i), **3.** (vi), **4.** (iv), **5.** (iii), **6.** (ii)

B. 1. This region lies between river Krishna and Narmada. It had some muslim dynasties namely Ahmadnagar, Berar, Bidar, Bijapur and Golconda.

2. South India saw the rise of powerful Kingdoms. The pallavas, the pandyas and the cholas.

3. The cholas established a powerful empire in South India by Vijayalaya. They ruled in South India for over four centuries. Rajaraja chola, Rajendra I were the most powerful rulers of chola dynasty.

4. Irrigation during chola kingdom was much improved. A variety of methods were applied for it. Many wells were dug; huge tanks were also constructed to collect water. The kings themselves took interest in organizing labour and runners and extensive planning.

5. The members of the sabha were the permanent levellers. However there were separate committees to supervise different fields like gardens, temples, etc. Names of the eligible persons to be members of the different committees were written on small tickets of palm braves. The tickets were put into an earthen pot and a young boy was asked to take out the tickets one by one for each committee. The person selected through this process was declared to be the member of the committee of the sabha in the chola empire.

C. 1. False, **2.** True, **3.** True

Worksheet-3

The Sultans of Delhi

A. 1. five, **2.** Slave, **3.** Alauddin Khalji, **4.** Suri

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

C. 1. Ananga Pala of Tomar dynasty and Prithviraj Chauhan of Chauhan dynasty were important Rajput rulers during the 12th century.

2. Qutbuddin Aibak-military general of Muhammad Ghori established the Slave dynasty.

He was followed by Iltutmish and Raziya, the first woman Sultan and Balban.

3. **(i)** Jalaluddin Khalji   (1290-1296)

    (ii) Alauddin Khalji   (1296-1316)

D. 1. (d), **2.** (b), **3.** (a)

Worksheet-4

The Mughal Empire

A. 1. Ranks and salaries were determined by a numerical value called Zat. The higher the zat, the most prestigious was the noble's position in court and the larger his salary.

    2. He was the ruler of the Mangol tribes, China and Central Asia.

    3. Bairam Khan.

    4. Mansabdars received their salaries or revenues assignment known as jagirs.

B. 1. Babur, **2.** Safavid Khan, **3.** high positions, **4.** administration.

C. 1. True, **2.** False, **3.** False

D. 1. (ii), **2.** (v), **3.** (iv), **4.** (vi), **5.** (iii), **6.** (vii), **7.** (i)

Worksheet-5

Architecture in the Medieval Period

A. 1. (d), **2.** (a), **3.** (a), **4.** (d)

B. 1. Garbagriha, **2.** moses and administration, **3.** Iltutmish, **4.** Somnath

C. 1. Large stepped wells were called baolis.

    2. A series of pictures showing the legendary Greek God Orpheus playing the flute.

    3. Mahmud Ghazni was the first independent ruler of the Ghaznavid dynasty.

D. 1. This is the Qutub Minar.

    2. It is located in Delhi.

    3. Qutub-ud-Din-Aibak

Worksheet-6

Towns, Traders and Craftsmen

A. 1. (d), **2.** (b), **3.** (b)

B. 1. Virupuksha, **2.** Lastwax, **3.** Pushkar, **4.** Domingo Paes.

C. 1. Devadasis were the temple dancers who performed in front of the desty, rally and masses in the many pillared hall of Virupuksha temple.

    2. They made donations.

    3. Town with permanent temple or temples such as Puri in Orrissa.

D. 1. (ii), **2.** (v), **3.** (iv), **4.** (iii), **5.** (i)

Worksheet-7

Mobile and Settled Communities

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

B. 1. (iv), **2.** (iii), **3.** (ii), **4.** (i)

C. 1. Gond clan usually controlled the garh.
   2. The Mughal forces attacked Garha Katanga in 1565.
   3. The Ahoms introduced new method of rice clutivaiton.
   4. Craftspersons, pedlars and entertainers formed the itinerant groups.

Worksheet-8

Religious Developments in the Medieval Period

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

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

C. 1. Suffis were muslims mystics who rejected hypocrisy in religion and emphasized love, devotion to God and compassion for human beings.
   2. Gurumukhi is the phonetic script in which the Guru Granth Sahib, Sikhism's sacred scripture, is written. The words of hymns and poetic verses of Guru Granth Sahib are known as Gurbani.
   3. Islam believes in one God, Allah. They also believe in giving alms.
   4. Virashaiva movement was initiated by Basavanna and his companions like Allama Prabhu and Akkamahadevi in Karnataka in mid 12th century.

Worksheet-9

Development of Regional Cultures

A. 1. (i), **2.** (v), **3.** (iv), **4.** (iii), **5.** (ii)

B. 1. (a), **2.** (d), **3.** (b), **4.** (b)

C. 1. Miniatures are small sized paintings generally done in water colour on cloth or paper.
   2. Rice and fish curry.
   3. Attribution of living souls to plants and inanimate objects and natural phenomena is known as animism.

D. Wajid Ali Shah, the last Nawab of Awadh and the emperors.
   Epics about knights and stories about canterbury tales.

Worksheet-10

Political Formations in the Eighteenth Century

A. 1. (iv), **2.** (v), **3.** (i), **4.** (vi), **5.** (ii), **6.** (iii)

B. 1. Cash, **2.** Peshwa, **3.** Nadir Shah, **4.** Ahmad Shah Abdali

C. 1. The successors of Aurangzeb who were weak and incompetent are refereed to as later mughals.

2. The old mughal provinces were the principalities of Awadh, Bengal and Hyderabad.

3. Nadir Shah of Iran and Ahmad Shah Abdali of Afghanistan.

Worksheet-11

Democracy

A. 1. (a), **2.** (c), **3.** (b), **4.** (d), **5.** (b), **6.** (a), **7.** (a), **8.** (d)

B. 1. pro-decomcracy movement, **2.** abolitionists movements, **3.** Boycott movement

4. Nazism, **5.** American civil right movement

Worksheet-12

Equality in Democracy

A. 1. Om Prakash Valmiki, **2.** Tamil Nadu, **3.** American, **4.** 1964, **5.** elected representatives,

6. caste and religion, **7.** equal, **8.** stand and enrichment

B. 1. (ii), **2.** (i), **3.** (iv), **4.** (v), **5.** (iii)

C. 1. Dignity means thinking of one self and others as worthy of self respect.

2. Prior to 1950, the African Americans were treated extremely unequally in the USA and denied equality through law.

3. A movement took place in the USA in the late 1950's to push for equal rights for Africans– Americans. This movement later came to be known as civil rights movement.

4. It is about the bitter experiences of growing up of a dalit boy.

Worksheet-13

The State Government

A. 1. Governor, **2.** Chief minister, **3.** Parliament, **4.** Diarrhoea, **5.** Government,

6. Legislators, ministers

B. 1. National, state and Local

C. Bill : Bill is a proposed law that has not been passed yet.

Law : A law is a passed bill.

Ordinary Bill : An ordinary bill is a bill that can be presented for discussion in any of the two houses of the parliament by a minister or private member.

Money Bill : It is presented in the lower house of the parliament. It contains only provisions dealing with imposition, abolition, remission, alteration or regulation of any tax.

Worksheet-14

The Role of the State Government

A. 1. Our ability to remain free of illness and injures.

2. Costa Rica

3. hospitals, government

4. Cholera, typhoid, diarrhoea, dysentery etc.

5. Registered Medical Practitioner. They are located in rural areas.

B. 1. True, **2.** True, **3.** False, **4.** False, **5.** True, **6.** False, **7.** True

C. Public Health Services : It is usually provided by the government through national healthcare system. Public health care services are cheaper.

Private Health Services : It can be provided through for profit hospitals and self-employed practitioners.

Worksheet-15

Media and Democracy

A. 1. Magazines : Advantages : (i) The advertisement may be seen several times. **(ii)** Better reproduction of advertisements than newspapers.

Disadvantages : (i) Limited audience reach. **(ii)** Long lead times.

2. Radio : Advantages : (i) Affordability **(ii)** Wide reach and audience targeting.

Disadvantages : (i) Poor attentiveness and fragmentation **(ii)** Lack of visual appeal.

3. Television : Advantages : (i) Free entertainment **(ii)** Social surrogacy

Disadvantages : (i) Television can make you lazy. **(ii)** Violence and illicit.

B. Right to Safety : It means right to be protected against the marketing of goods and services, which are hazardous to life and property.

Right to Choice : The consumer Protection Act describes the right to choice as the right to be assured, wherever possible, access to a variety of goods and services at competitive prices.

Right to Seek Redressal : It is defined the right to seek compensation due to damage caused by unfair trade practices and exploitation.

Right to be Informed : Individuals have the right to be informed about the collection and use of their personal data.

Right to be Heard : This right applies equally to children's participation in social and political matters as well as in judicial and administrative proceedings.

Worksheet-16

Advertising

A. 1. Print advertising, **2.** Broadcast advertising, **3.** Outdoor advertising, **4.** Digital advertising

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

C. 1. Mentos, **2.** Nokia Mobile, **3.** McDonald, **4.** Bournvita, **5.** Cadbury's 5Star Chocolate, **6.** Cadbury's Diary Milk Chocolate, **7.** Nerolac Paint, **8.** Rin bar, **9.** Hero Honda bike, 10. Pepsi

Worksheet-17

Social Aspects of Gender Role

A. **1.** The fact of being male or female.

2. A stereotype is a mistaken idea or belief many people have about a thing or group that is based upon how they look on the outside, which may be untrue or only partly true.

3. Societies make clear distinctions between boys and girls from an early age. Most societies do not value equally the work of men and women. The responsibility of house work lies mainly with women. However, discrimination takes place be devolving the tasks of housework and care-giving and not recognizing them as work.

4. On a global scale, achieving gender equality also requires eliminating harmful practices against women and girls, including sex trafficking, femicide, wartime sexual violence, gender wage gap and other oppression tactics.

B. **1.** (c), **2.** (b), **3.** (b)

C. **1.** Central Statistical Organisation, **2.** The Constitution, **3.** Domestic worker, **4.** Cars, Dolls; **5.** teenagers, **6.** sixth.

Worksheet-18

Economic Aspects of Gender Role

A. **1.** Anytime a person crosses a boundary—a legal boundary, a moral boundary, a physical boundary or a binding business deal—that's a violation.

2. It is unlawful to harasses a person (an applicant or employee) because of that person's sex.

3. Under the dowry prohibition act, any act to take or give dowry is punishable in India. The punishment for violating the anti-dowry law is imprisonment for upto 5 years and fine of ₹ 15,000 or the value of dowry given, whichever is more.

4. The Hindu code bills were several laws passed in the 1950, that aimed to codify and reform Hindu personal law in India.

B. **1.** Pandita, **2.** 76, 54; **3.** street plays, public meetings; **4.** 14th August, Wagah

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

D. **1.** (vi), **2.** (v), **3.** (iv), **4.** (iii), **5.** (ii), **6.** (i)

Worksheet-19

Markets Around Us

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

B. **1.** weekly, **2.** wholesale, retailers; **3.** producers, **4.** little, **5.** fewer

C. **1.** True, **2.** False, **3.** True, **4.** True

D. **1.** (iii), **2.** (iv), **3.** (i), **4.** (ii)

A Chain of Markets

A. 1. The five major market system types are perfect competition—monopoly, oligopoly, monopolistic competition and monopsony.

2. Chain of markets is a series of market that are connected like links in a chain because products pass from one market to another.

3. Online shopping is a form of electronic commerce which allows consumers to directly buy goods or services from a seller over the internet using a web browser or a mobile app.

B.

Producer	**Consumer**	**Trader**
Producer is the person that produces some thing for the people.	Consumer is something that consumes what the producer produced.	A person who buy and sells things, especially goods in a market or company.

C. 1. (v), **2.** (i), **3.** (iii), **4.** (ii), **5.** (iv)

D. 1. A chain of market refers to a series of markets that are connected like links in a chain because products pass from one market to another.

2. (c).

Our Environment

A. 1. 5th June, **2.** information revolution, **3.** Gravitational, **4.** hydrosphere, **5.** continents, ocean; **6.** atmosphere, sun

B. 1. Oceans, seas, canals, ponds, lakes, spring etc.

2. Biotic environment consists of living things such as organism, plants and animals whereas abiotic environment consists of non-living things such as air, water, snow, mountains etc.

3. Land, water, air, plants and animals are the basic components of the natural environment.

4. Environment is everything that is around us. It can be living or non living.

5. Environment plays an important role in the healthy living of human beings. It is the only home that humans have, and it provides air, food and other needs.

6. Lithosphere in the reservoir of nutrients that are essential for life, accessible to living things in the form of soil.

C. 1. False, **2.** True, **3.** False, **4.** False

Interior of the Earth

A.

B. **1.** intrusive rocks, **2.** sand, **3.** South Africa, **4.** mantle, **5.** basalt, **6.** pressure, **7.** inside and outside, **8.** concentric, **9.** nickel and iron, **10.** metamorphic, temperature

C. **1.** Plants grow on the crust.
   2. silica and alumina.
   3. 1220 km.
   4. The crust is made up of oxygen, silicon, aluminium, iron, calcium, sodium, potassium and magnesium.
   5. Fossils are remains of plants or animals that got preserved over millions of years.
   6. Minerals are solid chemical compounds that occur naturally in pure form.
   7. Rocks formed from crystallization and solidification of molten rocks called magma within the earth.

Our Changing Earth

A. **1.** **Epicenter :** The point on the earth's surface where the effects of a sudden movement (earthquake) are felt most strongly.
   2. **Weathering :** It is the breaking down of rocks, soils and minerals as well as wood and artificial materials through contact with the earth's atmosphere, water and biological organisms.
   3. **Deposition :** The natural process of leaving a layer of a substance on rocks or soil is known as deposition.
   4. **Delta :** An area of flat land shaped like a triangle where a river divides into smaller rives as it goes into the sea.

B. **1.** (b), **2.** (c), **3.** (a), **4.** (a)

C. **1.** erosion, deposition; **2.** Flood plain, **3.** circular, **4.** hypocenter

Atmosphere (Air)

A. **1.** (d), **2.** (b), **3.** (c)

B. **1.** thermosphere, **2.** rain gauge, **3.** temperature, **4.** atmosphere, **5.** carbon dioxide

C. **1.** The degree of hotness or coldness of a substance is called temperature.

2. Water vapour is the gaseous phase of water.

3. Insolation is the solar radiation.

D. 1. It is an instrument measuring atmospheric pressure used especially in forecasting the weather and determining altitude.

2. Instrument used by meteorologists to gather and measure that amount of liquid precipitation over a set period of time.

Worksheet-25

Weather and Climate

A. 1. Weather : The state of the atmosphere at a particular place and time as regards heat, cloudiness, wind, rain etc.

2. **Climate :** The weather conditions prevailing in an area or over a long period.

3. **Humidity :** It is the amount of water vapour present in air.

4. The pressure exerted by the weight of the atmosphere.

B. 1. humidity, **2.** rain, **3.** air pressure, **4.** temperature.

C. The heat retained by the earth increases the temperature of the atmosphere. It is called global warming. The rise in temperature causes the snow in the coldest parts of the world to melt. Due to this seas level rises causing floods in the coastal areas. There may be drastic changes in the climate of a plate bending to the extraction of same plants animals in the long run.

D. Accurate weather prediction are important for planning our day to day activities. Farmers need information to help them plan for the planting of and harvesting of their crops. Weather forecasting helps us to make more informed daily decisions.

Worksheet-26

Hydrosphere (Water)

A. 1. Cycle that involves the continuous circulation of water in the earth's atmosphere system is called water cycle.

2. A slowly moving mass or river of ice formed by the accumulation and compaction of snow on mountains or near the poles.

3. When a liquid changes to a vapour caused by an increase in temperature is termed as evaporation.

4. Salinity is the saltiness or amount of salt dissolved in a body of water.

B. 1. navigation, **2.** spring and glaciers, **3.** Caspian, **4.** tides and currents

C. 1. (v), **2.** (iv), **3.** (i), **4.** (ii), **5.** (iii)

D. The strong gravitation pull exerted by the sun and moon on the earth's surface causes tides.

E. The dead sea has a lot of salt in it. Salt water is heavier (denser) than regular water. People can float in regular water, but since salt water is even denser, it is even easier to float in the dead sea.

Worksheet-27

Natural Vegetation and Wildlife

A. **1.** (a), **2.** (a), **3.** (a), **4.** (b), **5.** (a)

B. **1.** (v), **2.** (ii), **3.** (iii), **4.** (iv), **5.** (i)

C. **1.** Seal, walruses, musk oxen, arctic-cow, polar bear and snow foxes.

   2. Shrubs are found in the dry regions.

   3. They are found in polar areas of Europe, Asia and North America. Only mosses, lichens and very small shrubs are found here. The animals have thick fur and thick slan so that they remain protected from the cold climate conditions. Seal, walruses, musk oxen, arctic owl, polar bears and snow foxes are found here.

Worksheet-28

Human Environment : Settlement, Transport and Communication

A. **1.** Scattered settlements are those settlements in which devellings are spaced over large areas (for example in hills).

   2. Mode of communication is the device of sending massages, ideas and information from on place to another within on time.

   3. The ways made underground under the existing road ways or rail ways or river ways to facilitate the smooth passage of traffic and passengers uninterruptedly.

B. **1.** flyovers, **2.** site, **3.** slanting, **4.** temporary, **5.** developed, **6.** South Louisinia, 7. Indira Gandhi International Airport

C. **1.** (c), **2.** (b), **3.** (a), **4.** (b)

Worksheet-29

Human Environment Interactions : The tropical and the Sub-tropical Regions

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

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

C. **1.** Terraces are steps or slope to create flat surfaces on which crops are grown. The slope is removed so that water does not run off rapidly.

   2. Area between 10° North and South latitudes known as equatorial region.

   3. These are small rives that join the main river. The main river along with all its tributaries that drain an area, forms a river basin or the catchment area.

Worksheet-30

Life in Temperate Grasslands

A. **1.** The prairies are located in the heart of the continent, we find here the continental type

of climate which is characterised by the extreme temperatures. The annual rainfall is moderate and is ideal for the growth of grass. Whereas the velds have a wild climate due to the influence of the Indian Ocean. Winters are cold and dry temperature varies between 5°C and 10°C and July is the coldest month. The velds receives rainfall mainly in the summer month from November to February. The animals found in this region are lions, leopards and cheetas. In the high velds acacia and marula are seen to be growing.

2. Prairies are practically treeless. Willows, alders and poplars and found here. Areas with 50 cm rainfall with fertile soil grow maize, potatoes, soyabeans, cotton and alfa-alfa. Areas with unreliable rainfall have short grasses are suitable for cattle rearing. Large cattle farms called ranches are looked after by the shurdy men called cowboys. Bison or the American buffalo is the most important animal of this region. Whereas the vegetation cover in velds is sparse. Grasses climate the landscape red grass grows in lush velds. In the high velds, acacia, and marula are seen to be growing. Lions, leopards, cheetah and kudu are two animals find here.

B.

Worksheet-31

Life in the Hot and Cold Deserts

A. 1. (iv), 2. (v), 3. (i), 4. (ii), 5. (iii)
B. 1. butter and cheese., 2. Zoji-la, 3. indus, 4. Ladakh

C. **1.** Desert is an arid region characterised by high or low temperatures and has scarce vegetation.

2. The deserts are characterised by low rainfall, scanty vegetation and extreme temperatures.

3. If is scorching hot and parch day. It has shot rainy season with dear skier. Days are hot and temperature during the day may soar as high or 50°C, heating up the sand and the nights may be freezing cold with temperature zero degrees.

D.
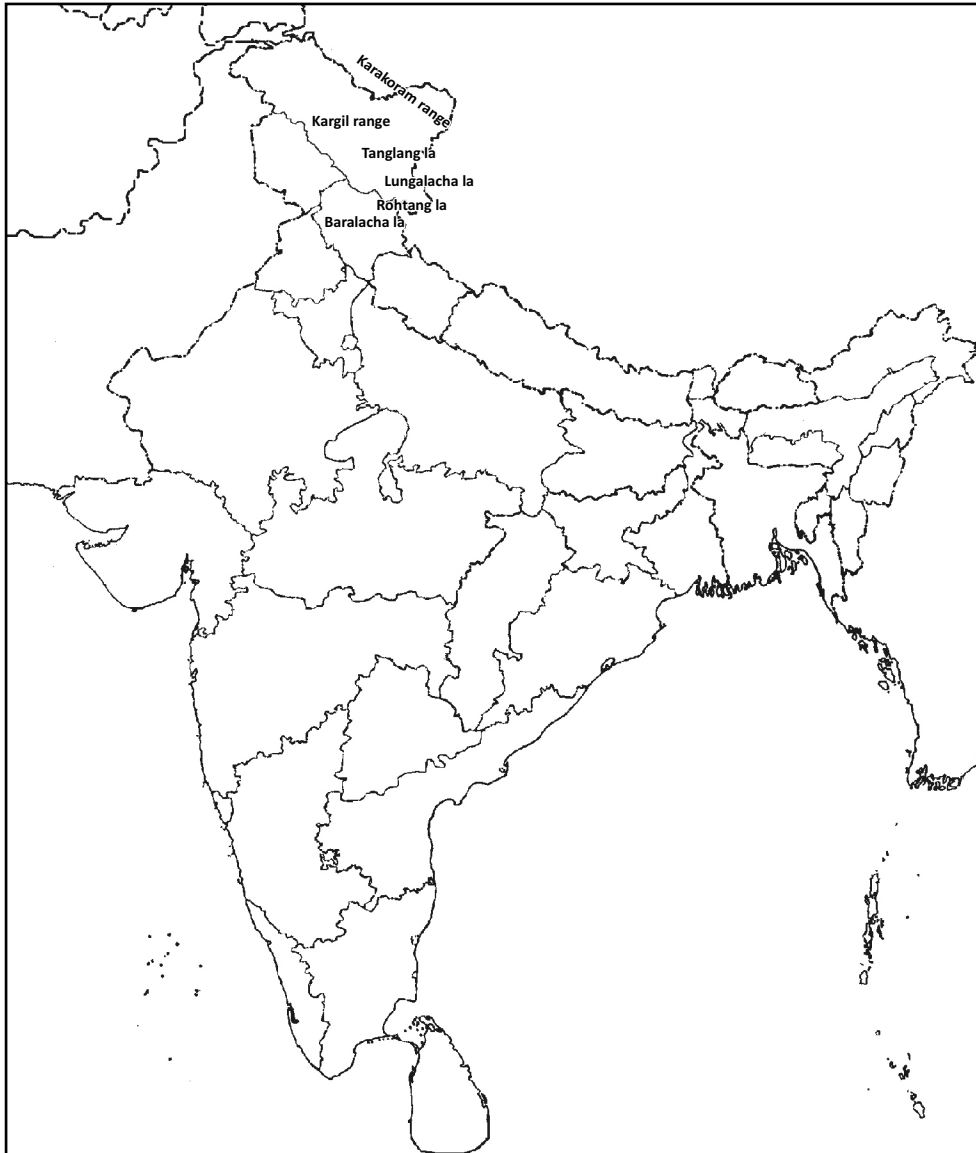
Computer–7

Worksheet-1A

World Wide Web

A. 1. (ii); **2.** (iii); **3.** (ii)

B. Cloud computing is the practice of using a network of remote servers hosted on the internet to store, manage and process date, rather than a local server or a personal.

C. It is a software application for accessing information on the world wide web.

D. 1. Play lots more online games.
   2. Share pictures and videos with your friends and family.

E.

If you move your mouse over a hyperlink, it will change to the shape of a hand.	A hyerlink is usually underlined.	If you click on a hyperlink, your computer will shut down.

If you move your mouse over a hyperlink, it will change to the shape of a land.	A hyperlink is usually in bold.	If you click on a hyperlink, you will go to a different page on the World Wide Web.

F. A back button allows an end user to navigate to a previously viewed web page.

Worksheet-1B

World Wide Web

A. 1. True; **2.** False; **3.** True; **4.** True

B. 1. com; **2.** web browser; **3.** HTML; **4.** .edu, **5.** Internet explorer

C.

Internet explorer	Firefox	Chrome	Opera	Safari

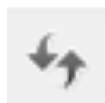**D.**

Back   Forward   Refresh   Stop   Home

The back-button is to go back to a web page that you have just viewed.
The forward button is to go forward to the web page that you have previously viewed.
The refresh button will reload the webpage that you are on.
The stop button is to stop a web page from loading.
The home button brings you back to your starter web page.

Number System

A. 1. (iv); 2. (i); 3. 10110010; 4. (i)

B. 1. $(22)_{10}$; $(1842)_{10}$; $(17069)_{10}$

C. 1. A base or radix is the number of different digits or combination of digits and letters that a system of counting uses to represent numbers.

2. It is a method of representing numbers that has 2 as its base and uses only the digits 0 and 1.

3. The number system whose base is 8 is called as the octal numbers system.

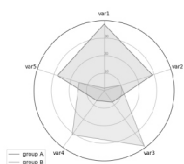4. Hexadecimal number system is one that uses 16 symbols. (0-9) and (A-F) to represent a value.

Number System

A. 1. (iv); 2. (viii); 3. (v); 4. (ix); 5. (ii); 6. (vii); 7. (vi); 8. (i); 9. (iii)

B. 1. True; 2. True; 3. True; 4. True
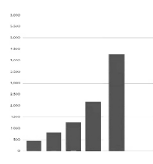
C. 1. Binary; 2. Decimal; 3. 14; 4. 10; 5. variable
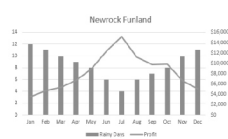
Advanced Features of MS Excel

A. 1. (iv); 2. (ii); 3. (i); 4. (iii); 5. (iv)

B. 1. True; 2. True; 3. True; 4. True
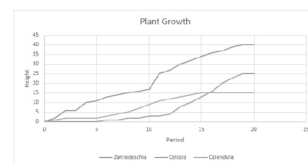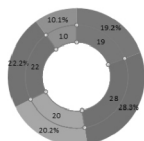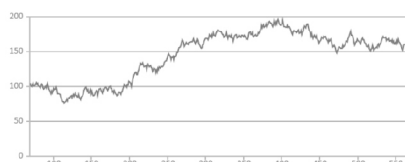

Radar chart

Pictograph

Combochart

Scatter chart

Doughnut chart

Line chart

Pie chart

C. 1. (iii); 2. (i); 3. (ii); 4. (v); 5. (iv)

Worksheet-3B

Advanced Features of MS Excel

A. 1. F; **2.** T; **3.** F; **4.** T; **5.** F

B. 1. Title button; **2.** Doughnut; **3.** Criteria button; **4.** Eyes

C.   Open the Excel spreadsheet

Use mouse to select the cells that contain the information for the table

Click the "insert" tab > Locate the "Tables" group

Click "Table"

If we have column headings, check the box "My table has headers."

Verify that the range is correct > click (OK)

D.   Select the cell range we want to sort.

Select the Data tab on the Ribbon, then click the sort command.

The sort dialog box will appear.

Decide the sorting order (either ascending or descending).

Once we are satisfied with our selection, click OK.

The cell range will be sorted by the selected column.

Worksheet-4A

QBasic Programming

A. 1. (ii); **2.** (iii); **3.** (iii); **4.** (ii); **5.** (i); **6.** (iv)

B. x = 4, y = 3, z = 5

C = x + y + z

S = C/2

Ar = sqr (s* (s–x)* (s–y)* (s–z)

Print the circumference is C Print the area is AR

C. 1. F; **2.** T; **3.** F; **4.** F

start

x = 4, y = 3, z = 5

C = x + y + z

S = C/2

Area = Sqr (s*(s–x)* (s–y)* (s–z))

Print C, Ar

end

Worksheet-4B

QBasic Programming

A. 1. if and else; **2.** loop; **3.** OR operator (11); **4.** ++/– –

B. 1. (i); **2.** (v); **3.** (iv); **4.** (iii); **5.** (ii)

C. 1. The process of repeating a series of statements as many times as needed. Loop control variable : A variable used to determine whether a loop will be executed.

Loop body : The statements that are executed each time a loop repeats. These loops are used to have a task repeated a specific number of times.

2. The AND operator is a Boolean operator used to perform a logical conjunction on two expressions. Expression 1 and Expression 2.

3. The GOTO statement sends the procedure to a line label or a line number in the program.

4. The for....next statement is an interactive, incremental loop statement used to repeat a sequence of statements for a specific number of occurrences. A for....next loop executes a set of statements for successive values of a variable until a limiting value is encountered.

Worksheet-5A

Graphics and Sound in Programming QBasic

A. 1. (i); **2.** (ii); **3.** (ii); **4.** (ii); **5.** (i); **6.** (ii); **7.** (i)

B. Paint statement is used for filling a graphic area with a specified color or pattern.

C. The SOUND command produces sound of a specific frequency for a specific duration from the PC speaker. Only one sound can be played at a time. If multiple SOUND statements are issued sequentially, every statement after the first will not execute until after the previous one finishes.

D. PLAY and SOUND statements are to run in background. That is each note or sound is placed in a buffer allowing the BASIC program to continue execution while music plays in the background. As many as 32 notes can be played in background at one time.

E. Resolution measures the number of pixels in a digital image or display. It is defined as width by height or W×H, where W is the number horizontal pixels and H is the number of vertical pixels.

F. COLOUR : Colour means that we see in paint.
PAINT : Paint means that we can brush everything we want.

Worksheet-5B

Graphics and Sound in Programming QBasic

A. 1. Pixel; **2.** Line; **3.** White; **4.** only; **5.** (0, 0); **6.** Quality

B. 1. Colour statement; **2.** P-Set; **3.** BEEP Command; **4.** Lowest-37 Hz; Highest - 32767 Hz

C. QBasic color statement is used to change the foreground and the background color of the Text in the QBasic program.

D. The SCREEN statement is chiefly used to select a screen mode appropriate for a particular display hardware configuration.

E. The PSET statement stands for Pixel Set. A pixel is a dot on a computer graphics screen. Pixel stands for picture element. Set means to turn on, so this statement turns on one dot on the screen.

F. We need the screen coordinates of the end-points. That's another whole topic. Say the end points are (A, B) and (C, D). To draw a solid line connecting these points : LINE (A, B) – (C, D)

G. The circle that QBasic draws is a like that you could draw with a compass on paper –

(center X, center Y) says where to put the compass point, and Radius says how big the circle is. There are 640 columns across, so the middle of the screen for X is 320. There are 480 rows down, so the middle of the screen for Y is 240.

Worksheet-6A

Introduction to HTML

A. Hyper Text Markup Language (HTML) is the set of markup symbols or codes inserted into a file intended for display on the internet. The markup tells web browsers, how to display a web page's words and images.

B. 1. (iii); **2.** (i); **3.** (i); **4.** (iv)

C. 1. (iv); **2.** (iii); **3.** (ii); **4.** (v); **5.** (i)

D.

Container tag	Empty tag
• Container tag consists of opening tag + content + closing tag.	• Empty tag is tag without content or a closing tag.
• Container tags come is pairs that enclose content.	• Empty tags do not directly format content and thus come alone.

E.

Root element	Head element
The root element is a single element in XML document and it contains all the other elements.	The head element consists of the heading of all the elements like scripts, documents, and other information.

Worksheet-6B

Introduction to HTML

A. 1. computer networks; **2.** Hypertext Markup Language; **3.** tag; **4.** HTML; **5.** <and>; **6.** Berners-Lee; **7.** Web browser

B. 1. T; **2.** F; **3.** F; **4.** T; **5.** F

C. HTML attributes are special words used inside the opening tag to control the element's behaviour.

D. WYSIWYG is a content editing tool. In WYSIWYG editors the edited content whether text or graphics, appears in a form close to a final product.

E. The <HEAD> tag is typically used to import other files and define attributes of our page that are not displayed like meta data. The <body> tag is where we place the parts of our website that we want displayed like p tags, divs etc.

F. **<HTML> tag :** An HTML tag is a commonly defined as a set of characters constituting a formatted command for a web page.

<HEAD> tag : It is used to contain specific information about a web page, often referred to as metadata.

<TITLE> tag : A title tag is an HTML element that specifies the title of a web page.

<BODY> tag : The body tag defines the documents body.

Worksheet-7A

Formatting to HTML

A. 1. (iii); **2.** (i); **3.** (i); **4.** (ii); **5.** (i); **6.** (iv); **7.** (iii); **8.** (i); **9.** (ii)

B. 1. <A>; **2.** <p> and <blockquote>; **3.** <em>; **4.** <bgcolour>; **5.** <hr>

C. 1. $<h_1>$ to $<h_6>$; **2.**   **3.** <i>; **4.** <bgcolour>

Worksheet-7B

Formatting to HTML

A. 1. (ii); **2.** (vii); **3.** (viii); **4.** (x); **5.** (ix); **6.** (iv); **7.** (i); **8.** (iii); **9.** (vi); **10.** (v)

B. 1. <text align = "centre">.....</text>; **2.** <hl>; **3.** <text color = #hexcode>...</text>; **4.** comment; **5.** <sub>/<sup>

C. <b> – Bold text
<strong> – Important text
<i> – Italic text
<em> – Emphasized text
<mark> – Marked text
<small> – Smaller text
<del> – Deleted text
<ins> – Inserted text
<sub> – Subscript text
<sup> – Superscript text

Worksheet-8A

List in HTML

A. 1. T; **2.** T; **3.** F; **4.** F

B. 1. (iii); **2.** (i); **3.** (v); **4.** (ii); **5.** (vi); **6.** (iv)

C. 1. Python; **2.** Description list; **3.** Table

D. Definition List displays elements in definition form like in dictionary. The <dl>, <dt>, and <dd> tags are used to define description list. The three HTML description list tags are given below :
<dl> tag defines the description list.

Worksheet-8B

List in HTML

A. 1. unordered, ordered, description; **2.** 1; **3.** table data; **4.** column

B. The cell spacing attribute places space around each cell in the table. The cell padding attribute places spacing around data within each cell.

C. 1. (i); **2.** (ii)

D. 1. It is used to present data in tabular form.

   2. It defines the head cell of an HTML table.

   3. It defines the row cells in an HTML table.

   4. It is used to define cells of an HTML table which contains table data.

   5. It is used to define group of columns in a table.

E. A block quotation is a quotation in a written document that is set off from the main text as a paragraph or block of text and typically distinguished visually using indentation and a different type face or smaller size font. This is in contrast to setting it off with quotation marks in a run-in quote.

Worksheet-9A

HTML Frames

A. A frame is a part of a web page or browser window which displays content independent of its container with the ability to load content independently.

B.

Advantages	Disadvantages
1. It allows the user to view multiple documents within a single Web page.	**1.** A user is unable to bookmark any of the web pages viewed within a frame.
2. It is possible to load pages from different serves in a single frameset.	**2.** Frames can make the production of a website complicated, although current software addresses this problem.

C. 1. (i); **2.** (ii)

D. 1. Link; **2.** hyperlink; **3.** Book; **4.** <body>

E. Floating frames are designed to display paintings done or photos printed on stretched canvas. This method of attaching the artwork means that the piece does not need to touch the frame itself in order to be securely fastened, creating the illusion that it is floating within the frame.

Worksheet-9B

Statements in HTML

A. 1. frameset; **2.** <frameset>; **3.** rows attribute; **4.** cols attribute

B. 1. The purpose of the HTML border attribute is to set a visible border width for a table.

   2. It is used to specify whether or not a border should be displayed between the frames.

   3. This attribute specifies the amount of space to be left between the frame's contents in its tops and bottom margins.

C. a simple frame document:

   <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"

"http://www.w3.org/TR/html4/frameset.dtd">
```
<HTML>
<HEAD>
<TITLE>A simple frameset document</TITLE>
</HEAD>
<FRAMESET cols="20%, 80%">
<FRAMESET rows="100, 200">
   <FRAME src="contents_of_frame1.html">
   <FRAME src="contents_of_frame2.gif">
</FRAMESET>
<FRAME src="contents_of_frame3.html">
<NOFRAMES>
<P>This frameset document contains:
<UL>
   <LI><A href="contents_of_frame1.html">Some neat contents</A>
   <LI><IMG src="contents_of_frame2.gif" alt="A neat image">
   <LI><A href="contents_of_frame3.html">Some other neat
contents</A>
   </UL>
</NOFRAMES>
</FRAMESET>
</HTML>
```
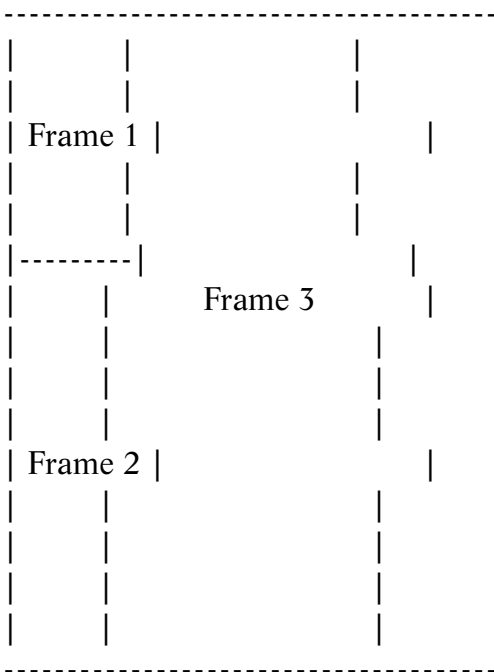that might create a frame layout something like this:

```
----------------------------------------
|        |                   |
|        |                   |
| Frame 1 |                  |
|        |                   |
|        |                   |
|--------|                   |
|        |     Frame 3       |
|        |                   |
|        |                   |
|        |                   |
| Frame 2 |                  |
|        |                   |
|        |                   |
|        |                   |
|        |                   |
----------------------------------------
```

D. 1. (v); **2.** (iii); **3.** (iv); **4.** (ii); **5.** (i)

Worksheet-10A

Introduction to Java Programming

A. 1. Identifiers are tokens (symbols) which name the language entities. Some of the kinds of entities and identifier might denote include variables, types, labels, suboutlines, and packages. Which character sequences constitute identifiers depends on the lexical grammar of the language.

2. A literal is a notation for representing a fixed value in source code.

3. A variable or scalar is a storage location paired with an associated symbolic name, which contains some known or unknown quantity of information referred to as a value.

4. Blue J is an integrated development environment for the Java programming language, developed mainly for educational purposes, but also suitable for small-scale software development.

B. 1. (iv); **2.** (iv); **3.** (i); **4.** (i)

C. 1. Public class Echo {public static void main (string□args){string line

2. Scanner in = new Scanner (System.in); System.out
print ("Type something:"); line = in.nextline ( );

3. System.out.printin ("You said : " + line); System.out.
print ("Type something else:"); line = in.nextLine ();

Worksheet-10B

Introduction to Java Programming

A. 1. T; **2.** F; **3.** F; **4.** T

B. 1. bench; **2.** explained, proud; **3.** variables; **4.** Eclipse

C. 1. Java applets were small applications written in the Java programming language, or another programming language that compiles to Java bytecode and delivered to users in the form of Java bytcode.

2. In Java, delimiters are the characters that split the string into tokens. Java allows us to define any characters as a delimiter. There are many string split methods provides by Java that uses whitespace character as a delimiter.

D. Output of Ist one is Computer Applications if 2nd one is System.out.println (n.ends with (e'); then Output, true

Worksheet-11A

JavaScript in HTML Documents

A. 1. (iv); **2.** (i); **3.** (iii); **4.** (v); 5. (ii)

B. 1. JavaScript includes various categories of operators : Arithmetic operators, Comparison operators, Logical operators, Assignment operators, Conditional operators, Ternary operators etc.

2. A Javascript variable is simply a name of storage location. There are two types of variables in Javascript : local variable and global variable.

3. Single-line comments are used to comment a part of a line or a full line of code in Javascript.

C. class welcome {

public static void main (String [ ] args) {

System.out.println {"Welcome to Java Programming")'

}

}

Worksheet-11B

JavaScript in HTML Documents

A. 1. (ii); **2.** (iii); **3.** (iii); **4.** (ii)

B. 1. F; **2.** F; **3.** T; **4.** T

C. 1. useful; **2.** reserved keyword; **3.** (script); **4.** windows prompt ( )

Worksheet-12

Viruses

A. 1. Bitdefender Antivirus plus; **2.** Norton 360 with LifeLock; **3.** Webroot Secure Anywhere for Mac; **4.** McAfee Antivirus Plus; **5.** Kaspersky Free Antivirus

B. They will try to kill each other. A competing antivirus program that is monitoring and sending information about our system tends to look like a virus. They will fight over viruses.

C. Melissa in a fast-spreading macro virus that is distributed as a e-mail attachment that when opened, disables a number of safeguards in Word 97 or Word 2000, and, if the user has the Microsoft Outlook e-mail program, causes the virus to be resent to the first 50 people in each of the user's address books.

D. 1. A computer virus is a type of malicious code or program written to alter the way a computer operates and is designed to spread from one computer to another.

2. It is a standalone malware computer program that replicates itself in order to spread to other computers.

3. A trozan horse is any malware which misleads users of its true intent.

4. Malware is intrusive software that is designed to damage and destroy computers and computer systems.

E. 1. (i); **2.** (i); **3.** (ii)

F. 1. Michelangelo, stoned; **2.** Badtrans, Bagle; **3.** USB drive/CD/DVD/floppy; **4.** boot

NOTES