

SUMMER VACATION HOMEWORK PACK



American Lycetuff
Ring Road Campus
Grade VII



Subjects :

- ❖ English
- ❖ Geography/ History
- ❖ Computer
- ❖ Science
- ❖ Mathematics
- ❖ Urdu
- ❖ Islamiyat

Name: _____

GENERAL INSTRUCTIONS FOR PARENTS

Please follow these instructions while getting this vacation work done by your kids;

- 1-** This pack shall cover the syllabus for the months of April and May with daily/weekly breakdown.
- 2-** Daily diary for this breakdown will be uploaded on EDN Parent App for your support.
- 3-** Students will have to complete Homework task on given dates as per daily diary.
- 4-** Daily completion of Homework shall enable student to follow the routine.
- 5-** You are requested to only guide the children to complete the task.
- 6-** Please ensure the Homework is neat and tidy. Use Rough notebooks for practice work.
- 7-** Final date for the submission of work is subjected to the Re-open of Schools as per government directives.
- 8-** Total (10) marks have been allocated for completion of Homework from Grade 1 to 9, as per followings:
 - a. Neatness: (02) Marks
 - b. Completion and accuracy: (06) Marks
 - c. Handwriting: (02) Marks

Stay Safe!

**Best Regards,
Principal**

چھٹیوں کا کام

والدین کے لئے ضروری ہدایات

محترم والدین:

بچوں سے کام کرواتے ہوئے مندرجہ ذیل باتوں کو مد نظر رکھیں:

- ۱- آپ کو مطلع کیا جاتا ہے کہ یہ پیک اپریل اور مئی کے سلیبس کی روزانہ / ہفتہ وار تقسیم کار پر مشتمل ہے۔
- ۲- اس پلاننگ پر مشتمل ہوم ورک ڈائری روزانہ کی بنیاد پر EDN PARENT APP پر اپلوڈ کی جائیگی۔ جس کے مطابق کام کرنا ہر بچے کے لیے نہایت ضروری ہے۔
- ۳- یاد رہے کہ روزانہ کی بنیاد پر ہوم ورک کی تکمیل سے ہی بچے سلیبس مکمل کرپائیں گے۔
- ۴- آپ سے گزارش ہے کہ کام کی تکمیل میں بچوں کی صرف رہنمائی کریں اور انہیں کام خود کرنے دیں۔ اسکول کھلنے پر کام میں ضروری اصلاح اساتذہ خود کروائیں گے۔
- ۵- کوشش کریں کہ بچوں کا کام صاف اور خوشخط ہو۔ لکھائی کے لئے نوٹ بک یا ریفرجسٹر استعمال کریں۔
- ۶- کام مکمل کرنے کے بعد اسکول میں جمع کروانے کی تاریخ کا اعلان حکومت کے احکامات کے مطابق کیا جائیگا۔
- ۷- چھٹیوں کا کام مکمل کرنے پر بچوں کو اعزازی نمبروں سے نوازا جائیگا جنہیں پہلی سہ ماہی کے امتحانات میں شامل کیا جائیگا۔

احتیاط کریں اور محفوظ رہیں

اسکول پرنسپل

SUBJECT

ENGLISH

Henry Ford

Read the story. Then answer the question.

Henry Ford was born on a farm near Detroit, Michigan. He never really enjoyed farming and left the farm at age sixteen. He always carried around in his pockets nuts and bolts and machinery parts. This interest in machines led him to work for a while as an apprentice machinist, and later he went to work for Westinghouse servicing their steam engines. Clara Bryant became his wife in 1888. They had one child, a son they named Edsel. When Henry was twenty-eight he became an engineer at Edison Company which made electrical generating stations. The first car he made was a "gasoline buggy" called the Quadricycle. He drove it and drew a crowd everywhere he went. In 1903 he built two race cars to advertise the automobile. One he named the "999" and the other the "Arrow". In 1904 Ford himself driving the Ford Arrow. When he was forty years old Ford and eleven investors formed the Ford Motor Company. They had a \$28,000 investment in it. The Model T Ford was introduced on October 1, 1908. Five years later he started using an assembly line and could produce cars faster and cheaper. The 1912 Model T Ford touring car included such extras as oil lamps, horn, speedometer, and tools. Henry Ford's motto was "simplicity". By simplifying the process of making cars, he was able to make the car affordable to the common worker in America. He and his son Edsel designed a new car, the Model A. He produced tractors to help the farmer to farm more efficiently. Henry Ford died at the age of 83 of a cerebral hemorrhage. He was one of many people who helped to make America great.



Answer each question.

1. What do you know about the early life of Henry Ford?
2. Where did Henry Ford work?
3. What was the name of his first car?
4. Tell the achievements of Henry Ford from 1903 to 1912.
5. When did he die?

Name: _____

Date: _____

Grade 8 Reading Comprehension Worksheet

Bird of Prey

Read the passage. Then answer the questions.

Birds of prey, also known as raptors, hunt and feed on other animals. These birds are characterized by keen vision that allows them to detect prey during flight and powerful talons and beaks.

Many species of birds may be considered partly or exclusively predatory. In ornithology, the definition for "bird of prey" has a narrower meaning: birds that have very good eyesight for finding food, strong feet for holding food, and a strong curved beak for tearing flesh. Birds of prey generally prey on vertebrates, which are usually quite large relative to the size of the bird. Most also eat carrion, at least occasionally, and vultures and condors eat carrion as their main food source. Many raptor species are considered apex predators. Raptors are not birds that fly by flapping their wings; they have wings made so they can glide across the sky like most airplanes today.

The common names for various birds of prey are based on structure:

Eagles tend to be large birds with long, broad wings and massive feet. Booted eagles have legs and feet feathered to the toes and build very large stick nests.

Ospreys, a single species found worldwide that specializes in catching fish and builds large stick nests.

The hawks are medium-sized birds of prey that usually belong to the genus *Accipiter*. They are mainly woodland birds that hunt by sudden dashes from a concealed perch. They usually have long tails for tight steering.

Harriers are large, slender hawk-like birds with long tails and long thin legs. Most use a combination of keen eyesight and hearing to hunt small vertebrates, gliding on their long broad wings and circling low over grasslands and marshes.

Owls are variable-sized, typically night-specialized hunting birds. They fly almost silently due to their special feather structure that reduces turbulence. They have particularly acute hearing.

Answer the questions.

1. What is the main idea of the passage?
2. Underline the most important information in each paragraph.
3. Write a summary. Tell what is the most important.

Name: _____

Date: _____

Grade 7 Reading Comprehension Worksheet

Anna and the King

By Margaret Landon

Read the passage. Then answer the questions.

Anna, an English schoolteacher, is employed by the King of Siam to teach his children in a Buddhist temple.

Anna was telling the children about her own long-ago trip through Egypt, when there suddenly fell from the roof above her head onto the centre of the map, which she stretched on the table, a coil of something that looked at first like a thick silk cord neatly rolled into a ball.

In another instant the coil unrolled itself and began to move slowly away. Anna screamed, and forgetting her dignity fled to the far end of the temple expecting the children to follow her. When she turned, she was amazed to see all the royal pupils sitting quietly on their seats in an attitude of respect. Not a child had moved or made a sound. The temple was still. All the children's eyes were fixed on the snake as it moved in lazy curves along the entire length of the table. With a feeling of shame Anna returned to her seat to watch it. She even managed to share a little of the children's fascination as she looked into the clear eyes of the snake. She had never seen one like it.

The snake moved on its slow way down the table. To Anna each second seemed an hour. She held her breath in terror as it dropped from the table to the arm of the chair of Prince Chulalongkorn. What if the child moved and the snake struck? She had no doubt that her own life would be taken in a moment if the young prince went to die under her care. She wanted to call out to him to hold perfectly still, but no sound came. She need not have worried, for he sat as motionless as the Buddha gleaming in the twilight behind him. Anna could not swallow or breathe until she saw the snake glide from the chair and crawl through the corridor and down the steps, and finally out of sight. Then she almost fainted with relief.

Answer the questions.

1. What is the main idea of the passage?
2. Underline the five sentences that help you know the main idea.
3. Briefly summarize the passage.

Little Women

By Louisa M. Alcott
Playing Pilgrims

Read the passage. Then answer the questions.

"CHRISTMAS won't be Christmas without any presents," grumbled Jo, lying on the rug. "It's so dreadful to be poor!" sighed Meg, looking down at her old dress. "I don't think it's fair for some girls to have plenty of pretty things, and other girls nothing at all," added little Amy. "We've got father and mother and each other," said Beth from her corner. The four young faces on which the firelight shone brightened at the cheerful words, but darkened again as Jo said sadly, "We haven't got father, and shall not have him for a long time."

Thinking of father far away, where the fighting was. Nobody spoke for a minute; then Meg said, "You know the reason mother proposed not having any presents this Christmas was because it is going to be a hard winter for every one; when our men are suffering so in the army. We can make our little sacrifices. But I am afraid I don't;" and Meg shook her head. "I agree not to expect anything from mother or you, but I do want to buy Undine and Sintram for myself; I've wanted it so long," said Jo, who was a bookworm. "I planned to spend mine in new music," said Beth, with a little sigh. "I shall get a nice box of Faber's drawing-pencils; I really need them," said Amy decidedly. "Mother didn't say anything about our money and she won't wish us to give up everything.

Let's each buy what we want, and have a little fun." cried Jo. "I know I do, teaching those tiresome children nearly all day," began Meg. "You don't have half such a hard time as I do," said Jo. "How would you like to be shut up for hours with a nervous, fussy old lady, who keeps you trotting till you're ready to fly out of the window or cry?" "It's naughty to fret; but I do think washing dishes and keeping things tidy is the worst work in the world and my hands get so stiff." and Beth looked at her rough hands with a sigh that anyone could hear that time. "I don't believe any of you suffer as I do," cried Amy; "for you don't have to go to school with impertinent girls, who plague you if you don't know your lessons, and laugh at your dresses." "Don't you wish we had the money papa lost when we were little, Jo?" said Meg, who could remember better times.

Answer the questions.

1. What is the main idea of this passage?
2. Underline five sentences in the passage that support the idea.
3. Write a summary. Tell what is the most important.

CHAPTER 1: NOUNS (Pages 1–5) On workbook

CHAPTER 2: PRONOUNS (Pages 6–11) on workbook

CHAPTER 3: ADJECTIVES (Pages 12–19) on workbook

CHAPTER: 4 VERBS: TRANSITIVE AND INTRANSITIVE (Pages 22–28) on workbook

CHAPTER 5: VERBS: TENSES AND TIME (Pages 29–34)

SUBJECT

GEOGRAPHY

/ HISTORY

CHAPTER Three

Main agricultural products of the Muslim world

Reading, Dictation

To Questions And Activities, Page 16:

1. Students to discuss and come up with own answers, however some suggested answers are given below.
 - Grains must be perhaps the most important agricultural product because they form the basic diet of all people.
 - Fibres are probably next—cotton, wool, and then linen from flax—as everyone has to be clothed.
 - Plant foods—vegetables, roots, leaves (cabbage, spinach, etc.) are important as they supply essential nutrients, such as vitamins, to the body.
2. Products made from natural rubber, other than the ones mentioned in the book, are gloves, toys, balloons, adhesives, rubber bands, pencils, erasers, etc.
3. Students can research and find out amount of tea imported and consumed. Details are available on the Internet. The highest consumption per person is in the UK—2.3 kg per head per year! Pakistan's consumption is comparatively lower at 0.7 kg per person per year.

Worksheet #1

Complete these statements.

- a) _____ is the world's leading producer of palm oil.
- b) _____ is the tropical equivalent of wheat.
- c) The Aztecs called cocoa _____
- d) Coffee was discovered in the _____/_____ region.
- e) _____ is the main producer of coffee in the Muslim world.
- f) Muslim countries produce _____ of the world's tea.
- g) The rubber plant was originally found only in the _____ rainforests.
- h) The main Muslim countries producing rubber are _____ and _____.
- i) Muslim countries produce _____% of the world's cotton.
- j) _____ produces 3.5% of the world's sugar.
- k) _____ produces high quality wool.
- l) _____ is the world's biggest producer of cotton.
- m) _____ is the world's largest producer of sugar cane.

n) Bagasse is the by-product of _____ .

Unit # 4 (Minerals and natural resources of the Muslim world)

Reading , Dictation

Answers To Questions And Activities, Page 24:

1. Uses of gold and silver:

Gold: used in computers, electronic equipment's, satellites, space equipment, computers, dental work, and in making jewelry.

Silver: used in computers, photographic films, manufacture of chemicals, solar panels, medicines, water purification process, and in making jewelry, cutlery, and silverware.

Mining and purification: Gold is mined in two ways: from placer deposits and from lode or reef deposits. Placer deposits are usually gravelly, river beds or streams, where the gold is mined and refined on site. Lode or reef deposits are where the gold is found in seams of other minerals such as quartz, or sometimes with lead or copper. In placer deposits, the gold is obtained through panning, washing, and filtering. An example of this is the yukon Gold Rush in Canada in the 19th century. In lode or reef deposits, gold is extracted by power shovels, drilling, and blasting, and it is refined through chemical means.

Silver is also found along with other ores, and two thirds of the world's silver is obtained as a byproduct. It is refined through smelting, concentration, and chemical means (cyanide process).

2. You would probably have used LPG or piped gas for cooking breakfast; travelled on a bus using petrol, and which was maintained in good condition by regular oiling and lubrication. You may be wearing some form of make-up. Your clothes would be dyed; You would probably be wearing some synthetic material. Your vegetables and fruit would most probably have been grown using artificial fertilizer. Everything around us would have been painted, and though we may not have used the old pen and ink, the type on the page we are reading is oil-based. You would have used tires, whether you came to school on bicycles, cars, or buses, along a road coated with bitumen. So, today you have already used every one of the by-products of petroleum that are listed.

3. Coal is not commonly used where there are other sources of energy available because

- coal is dirty and very polluting when burned; its transport and storage are a problem as it pollutes the surroundings;
- it is bulky and awkward to transport; it has to be transported by rail or occasionally by road;
- the coal generally available in Pakistan is low grade—only about one third is combustible material—so that it gives out relatively little heat;
- disposing of residue—ashes—is messy and involves much work;
- gas and oil are much cleaner, more easily manageable and easier to transport (coal furnaces need constant stoking);
- the smoke from burning coal pollutes the atmosphere.

Oil is considered valuable because of its many uses and products. It is also a non-renewable energy resource—at least for the foreseeable future—hence it must be used judiciously. Oil is wasted as an automobile fuel by people driving around in fuel-heavy vehicles.

Worksheet # 2

- a) Muslim countries produce _____ of the world’s output of oil and _____ percent of natural gas.
- b) USA has to import oil in spite of its own oil production because it _____ more than it produces.
- c) Oil in its original form is a thick, black _____.
- d) The only important producer of coal in the Muslim world is _____.

2. Choose the correct answer.

- a) Algeria ranks _____ in the world’s output of natural gas.
 - i) fourth
 - ii) fifth
 - iii) third
 - iv) sixth
- b) Indonesia ranks _____ in the world’s output of tin.
 - i) second
 - ii) fifth
 - iii) sixth
 - iv) third
- c) Iran ranks _____ in the world’s output of oil.
 - i) second
 - ii) fourth
 - iii) third
 - iv) fifth
- d) Pakistan ranks _____ in the world’s output of cotton.
 - i) fourth
 - ii) second
 - iii) third
 - iv) fifth
- e) Nigeria ranks _____ in the world’s output of cocoa.
 - i) second
 - ii) eight
 - iii) sixth
 - iv) fifth

CHAPTER TEN (The early Muslims)

Reading , Dictation

. Answers To Questions And Activities, Page 51:

1. The Umayyad period is known mainly for the conquests by the Arab armies and its navy. dramatic and rapid Muslim expansion to North Africa, Spain, a brief excursion into France, as the Middle East, into Russia until stopped by the relatively barren steppes, and eastwa China, where the lines of communication were too far stretched, and no further advance Umayyad, the Arab empire expanded in all directions.
2. The Abbasids ruled at a time of greater political stability and security. Their rule is known for its emphasis on knowledge, research, scientific and cultural growth, and its economic power. This was a period of great culture and learning, especially in mathematics, science and medicine. Ancient manuscripts from Greece and Rome were collected and translated; in this way they were saved for posterity. It is rightly known as the 'Age of wealth and culture.'
3. The Europeans learnt a great deal from the Arabs of those times as the latter had developed a more advanced civilization. Details are given in the textbook, pages 48 to 50. In addition, there were great advances in learning and science. The new products, especially steel, silks, cotton, and carpets, led to a dramatic rise in trade between East and West, and ultimately, the voyages of discovery.
4. Places in Spain that have an Islamic history are Granada, Cordoba, and Toledo, to name a few. The influence is seen in the architecture, culture, literature and language, and music as well as cuisine. The entire Iberian Peninsula was known as Al-Andalus, and a province in southern Spain is still called Andalusia. (Words with Arabic origins can easily be found on the Internet; the range is fascinating.)
5. The Mongols were a mainly Mongolian race from the north of China; due to the harsh surroundings they lived in, they were fierce and competitive. They were nomadic tribes and were nature worshippers. Changez Khan united them into one tribe and later they converted to Islam. Their later famous descendants were the Mughal rulers of the subcontinent who established the Mughal Empire.

WORKSHEET # 3

1. Choose the correct answer.

- a) Major expansion of the Muslim rule took place during the Caliphate of _____.
- i) Hazrat Ali (RA) ii) Hazrat Usman (RA)
iii) Hazrat Umar (RA) iv) Hazrat Abu bakr (RA)
- b) The Umayyad dynasty came to power in _____
- i) 771 CE ii) 661 CE iii) 601 CE
iv) 610 CE
- c) _____ was a Berber general.
- i) Changez Khan ii) Halaku Khan
iii) Salauddin al Ayyubi iv) Tariq
- d) The fatimids founded the city of _____
- i) Cairo ii) Baghdad
iii) Damascus iv) Constantinople
- e) In Islamic history the _____ period is known as 'The age of wealth and culture'.
- i) Umayyad ii) Seljuq
iii) Ayyubid iv) Abbasid

2. Match the dynasties with their founders.

- a) Umayyad dynasty i) Seljuq beg
b) Seljuq ii) Nuruddin Zangi
c) Ayubids iii) Amir Muawiya ibn Abu Sufyan

WORKSHEET # 4

3. Complete the following statements.

- a) The Abbasid rule ended with the _____ in 1258.
- b) _____ is given the credit for building up the Muslim naval power.
- c) The Umayyad in Spain made _____ their capital and developed it into one of the finest cities in the world.
- d) It is believed that _____ has existed at its present site for the last 9000 years.

- e) Gibraltar is a variation of _____ named after
_____.
- f) _____ Established *Bait-ul-Hikmah*, the 'House of Wisdom' in Baghdad.
- g) The most important contribution by the Arabs was in the field of
_____.
- h) _____ recaptured Jerusalem from the Crusaders in 1188.
- i) The astrolabe is an _____ used in the past for
_____ the distances of stars and the position of ships.
- j) The word 'Mamlook' means _____ in Arabic.
- k) The Mongols converted to Islam in the _____ and
_____ centuries.
- l) The Ottomans were of _____ origin.
- m) The fatimids were based in _____ .

CHAPTER Eleven (Islam in South-east Asia)

Reading , Dictation

Answers to questions and activities, page 54:

1. Islam was spread to South-east Asia by the Muslim merchants and traders of Arabia and India who went to trade in spices and jewels in the 7th century CE. They later settled down along the coasts of Malaysia and Indonesia from the 16th century onwards.

Worksheet # 5

1. Islam was taken to South-east Asia by _____ from _____ .
2. The period between _____ and _____ and _____ was crucial in the spread of Islam in South-east Asia.
3. Islam was established on the rich island of Java by the year _____ .
4. _____ has the largest number of Muslims compared to any other country in the world.
5. The Aceh Kingdom was known as _____ in the _____ century.
6. In Central Asia, the _____ was the focal place for the spread of Islam in the region.
- 2 Name three non-Muslim countries of South-east Asia which have large Muslim populations, and state their percentage.

CHAPTER Twelve (Muslim scientists, philosophers, and travelers)

Reading , Dictation

Answers to questions and activities, page 59:

1. Mechanics is the study and science of machines that deals with movement, force and motion; how they work, etc.

Meteorology is the study of weather and climate. It helps in forecasting the weather.

Philosophy (from two Greek words: 'philo'—love of and 'Sophos'—wisdom) is the study of the nature of knowledge, reality, and existence. It is the study of the truth or wisdom through argument. Astrology is the study of the movements of the planets, stars, etc. in the belief that these can influence people's character and future. This is of course quite ridiculous.

Astrology and magic were considered as much reality in the past as geography or mathematics. People really believed that the stars could influence lives and characters. Magic was something that lay behind things that people could not understand. Primitive people till a few years ago believed that things such as airplanes and telephones were 'magic'.

Astronomy is the scientific study of the stars and planets and their movements by means of telescopes and many other scientific instruments.

2. Al Khwarizmi's work on mathematics, especially algebra and the concept of zero, revolutionized the application of mathematics to science and engineering. His major contribution was the adoption and use of '0' in mathematical calculations. Previously a dot had been used to indicate nothing and this led to confusion. He also was the inventor of what we call algebra, and the complicated term used in higher mathematics called algorithm which is extensively used in computers today. His advances in astrolabes were also important.

Worksheet # 6

Mark the correct answer.

Ibn Batuta's journeys covered a total of

- i 40,000 km ii) 120,000 km iii) 75,000 km.

He was appointed as a Qazi at the court of

- i) Humayun ii) Sher Shah Suri iii) Mohammad bin Tughlaq

Al beruni head mastered many languages but he always wrote in

- i Turkish ii) Hebrew iii) Arabic

In order to study the country in depth, Al-beruni visited

- i Persia ii) India iii) China

Ibn Sina was a philosopher and also a physician, whose main contribution was to

- i) philosophy
- ii) science
- iii) medicine

The Persian solar calendar was developed by

- i) Al-Khwarizmi
- ii) Omar Khayyam
- iii) Ibn Khaldun

g Which of these famous Muslims would you like to meet? Give your reason.

- i) Ibn batuta
- ii) Al-beruni
- iii) Omar Khayyam

CHAPTER THIRTEEN *(The decline and the reawakening of the Muslims)*

Reading , Dictation

Questions And Activi

ties, Page 64:

1. The reasons underlying the decline of the Muslims in the 17th and 18th centuries have been discussed in detail in the textbook (pages 60–61) viz. (a) weak, incompetent, or aggressively ambitious rulers; (b) decline in education; (c) the Industrial Revolution gave the Europeans great wealth and technical superiority, especially in weaponry; (d) corruption in many Muslim states weakened them; (e) internecine strife; (f) pursuit of worldly power and wealth.
2. The subcontinent and South-east Asian states were important to the colonial powers because they formed a guaranteed market for European goods. India was flooded with cheap cotton goods from Lancashire (UK) although it had a long-established hand-weaving industry of its own, but which could not compete with the machinery of the West. The colonies were also a source of raw materials of all kinds, especially for textiles, gold, and precious stones.
3. Muslims might have maintained independence by adhering to the laws of Islam especially regarding equality and just treatment. Had the rulers spent more time and effort in the social development and uplift of their people, they would have had stronger economies, as a result of education and industry, and would have been able to retain their independence.
4. Both Shah Waliullah and Syed Ahmed Shaheed were religious thinkers and leaders who believed in and promoted a fair and just system. They also tried to unite the people into a nation. Their ideas can be called progressive because Waliullah, by translating the Quran into the vernacular, hoped that people could understand its teachings properly. He fought for more equality and urged people to return to the tenets of their faith.

Syed Shaheed tried to put many of these ideas, well ahead of their time, into practice through the concept of jihad as a struggle for liberation from oppressive rulers and a movement towards the spirit of Islam.

5. The Muslim countries in Asia were rich in natural resources—spices, minerals, precious metals and stones, ivory, and timber. North African Muslim countries were colonized after the 19th century. The population of all these Muslim and other colonized countries was a source of cheap labor for the West.

Worksheet # 7

1. Complete these statements:

- a) The _____ century saw the rise of European powers.
- b) The chase for the power and loss of focus were the main causes for the _____ of the _____ states.
- c) The “Maghreb” states comprises of _____, _____ and _____.
- d) The _____ in the west made Europe rich and powerful.
- e) The _____ and _____ were among the sources of Muslim revival.

2. Choose the correct answer:

- a) Shah Waliullah was educated at a madrassa in _____.
i) Hyderabad ii) delhi iii) Punjab iv) Lucknow
- b) The Holy Quran was translated by Shah Waliullah into _____.
i) Sindhi ii) Urdu
iii) Persian iv) Punjabi
- c) Shah Waliullah stayed in Makka for _____.
i) One and half year ii) 12 years
iii) four years iv) 14 years
- d) Syed Ahmed Shaheed marched to _____ with his men.
i) Kabul ii) Ghazni
iii) Herat iv) bukhara
- e) The NWfP was renamed Khyber Pakhtunkhwa in the year _____.
i) 2000 ii) 2010 iii) 2005 iv) 2001

SUBJECT

COMPUTER

Unit # 3 : System software

Suggested answers.

1. **Describe three functions of an operating system.**

An operating system performs several functions. It helps in the booting up process. The booting up process involves starting up the computer and making it ready for use. An operating system manages the programs that run on the computer. These programs help the computer run properly. An operating system also maintains the files and folders stored on the computer so that they can be used by the user.

2. **What is the function of a device driver?**

A device driver runs the system devices attached to the computer. It first checks whether all the drivers are installed. It then checks whether all devices are connected to their drivers. It then displays a list of devices and tells the user whether any drivers need to be installed.

3.What is disk failure? How can we avoid data loss as a result of disk failure?

Loss of data from the hard disk is called disk failure. We can avoid data loss as a result of disk failure by regularly making back-up copies of our data. We can use back-up software to prepare back-up copies.

4.What is meant by debugging?

Debugging is the process of removing errors from a file.

D. Write paragraphs to answer the following questions.

1. **Describe two examples of multitasking by a computer. What enables the computer perform multiple tasks at the same time?**

The first example of multitasking could be writing in MS Word while the browser is running. The user may type a document in MS Word or prepare a spreadsheet in MS Excel while listening to an audio file on the Windows Media Player. The CPU allocates processing time and capacity to different applications which enables the computer to multitask.

2. **A computer has both CLI and GUI interfaces. Why do people still prefer GUI interfaces?**

CLI (command line interface), e.g. MS DOS and GUI (graphical user interface), e.g. Microsoft Windows have different strengths and weaknesses when compared to each other. GUI is more popular because everything is visible on the desktop and multiple programs can be executed at the same time by using the mouse, keyboard, and other input devices. CLI involves memorization of commands and a plain background which is not attractive. Only the keyboard is used for input.

Unit # 4 (Application software)

Reading , Dictation ,

Suggested answers

Answer the following questions.

1. Differentiate between application software and system software with the help of examples.

System software is responsible for the running and maintenance of a computer system. It cannot perform specific tasks. The Windows operating system, image viewers, and disk scanners are parts of system software. Application software is used for specific tasks. Microsoft Word and Microsoft Excel are two examples of application software.

2. What is educational software used for?

Educational software is used to provide interactive exercises on various topics. It offers interesting activities that make learning enjoyable. Educational software comes in the form of dictionaries, encyclopedias and educational games. It can be used to educate young children at home, and to train people in large offices.

3. How do different types of design software help people who work in factories?

Design software helps people who work in factories by controlling machines to perform difficult or dangerous tasks. Computer Aided Manufacturing (CAM) uses computers to control robots and machines that can perform dangerous tasks such as welding and lifting heavy objects. This helps to avoid injuries to factory workers.

4. What is desktop publishing software?

Desktop publishing software is a type of application software. It is used to produce documents like banners, books, greeting cards, and posters. Desktop publishing enables us to combine text and graphics to produce informative and attractive documents. It also helps us to produce such documents in less time.

5. What is a database? Why should it be well-organized?

A database is a collection of organized data. It helps people like business managers to search for important data and use it to make decisions. It is important for a database to be well-organized because it helps people to find data quickly and easily. They can then make quick decisions to solve problems. **E. Give descriptive answers for the following questions.**

1. A student wants to collect information about World War II and write a report for her class. Which application software should she use to complete this task? Give reasons.

The student should use Microsoft Word to prepare her report. The reasons are given below.

Microsoft Word includes several options for preparing reports such as formatting options and font styles. The user can write the report and edit it before making a printout. Features such as spell-check and grammar check can be used to remove common mistakes from the report. Information can be organized in the form of headings, bullets, and numbering to improve the appearance of the report.

2. A photographer is considering installing graphics software on his computer but does not know how it can help him. What would you explain to the photographer?

Graphics software has several uses for photographers. The main uses are explained below.

The photographer can scan and edit photographs for different documents such as brochures, flyers, or postcards. In addition, the photographer can edit the pictures to remove unwanted spots and objects from the image. He can also add design elements such as borders and frames to photographs using graphics software.

3. How is database management software used at your school?

Database management is mainly used to store information about teachers, students, and the educational program. It is used to store student information such as their names, roll numbers, education records, school fees details, etc. The names of all teachers, their educational qualifications, salary details, and subjects taught are stored on a database. The list of textbooks for all classes and syllabus for the term are stored on the school database.

Worksheet

1. What is computer-aided learning?

2. What is the benefit of computer-aided design (CAD)?

3. What is the function of a slide show?

4. What is the difference between graphics software and DTP software?

5. What is a media player?

6. What is meant by database management?

II. Complete each sentence by circling the correct words in the brackets.

1. Design software is used by (engineers/teachers).
2. Word processors are used to (calculate/edit) data.
3. (Graphics/Presentation) software is used for creating special effects in films.
4. A codec (increases/reduces) the size of an audio file.

5. (Microsoft Access/Microsoft Excess) is a popular database management software.
6. Decision-making software help to make decisions according to (choice/criteria).

Unit # 5 (More on Word)

Reading, Dictation

A. Answer the following questions.

1. **What is the advantage of viewing a document in different ways?**

Viewing a document in different ways allows us to see how it would appear in different formats. It enables us to see how the same document would appear in the form of a book or as a web page.

2. **How does the Split feature help us format a document?**

The Split feature helps us format a document by enabling us to view two parts of a single document in two different windows. We can scroll down one part of a document while viewing another part in a separate window. This helps us identify formatting errors in the document.

3. **Describe the steps involved in replacing a word in a document.**

To replace a word in a document, we can follow these steps:

- Go to the Editing group on the Home tab and select Replace.
- In the Find what window, type the word to be replaced.
- In the Replace with window, type the new word.

What is the difference between a footnote and an endnote?

A footnote appears at the bottom of every page whereas an endnote appears at the end of a document.

B. Write paragraphs to answer the following questions.

1. **What type of errors can be detected while using Print Preview?**

Print Preview can be helpful in detecting many types of errors before a document is printed. It can help to detect excessive empty space on some pages of the document. It can also help us correct the size of text that is too small or too large for comfortable reading. Accurate and consistent line and paragraph spacing, document formatting, borders, etc. can be checked to ensure the final document matches our requirements.

2. **What word processing features can help to give a professional appearance to a document?**

Some important features can help give a professional appearance to a document. Font type and size has options to select an appropriate font type and size. Normally Times New Roman with font size 12 is used for professional documents. Appropriate page borders and title page can be inserted to improve the presentation of a document. To avoid copying of the content, the footer and header can show the writer's information. A watermark can also be used.

3. **You receive two reports—one with footnotes and endnotes and one without. Which of these would you prefer? Why?**

I would prefer the report containing footnotes and endnotes. The reason is that this document is more authentic than the other one. I can cross-check the information from the source quoted and use it to do my own research. I can also verify if the report is based on correct information.

Worksheet

I. What is...?

1. What is the function of Web Layout?

2. What are the shortcut keys for the Undo and Redo commands?

3. What is page number alignment?

4. What is a section break?

5. What is meant by referencing?

6. What is the advantage of previewing a document before printing it?

II. Complete each sentence by circling the correct words in the brackets.

1. The default view in Microsoft Word is (Normal/Print Layout).
2. It is possible to set a (percentage/fraction) for zoom settings.
3. To reunite windows that have been split, we use the (Remove Split/Undo Split) feature.
4. The Insert key allows us to replace text to the (left/right) of the cursor.
5. The Word Count feature can be accessed from the (Insert/Review) tab.

Chapter 6 (: More on spreadsheets)

Reading, Dictation

Answer the following questions.

1. Describe the steps involved in changing row height.

To change row height, we can follow these steps:

- Click on the row number/s in the frame to select the row or rows.
- Select Row Height from the Format button on the Cells group on the Home tab.
- Enter the new height in the box opposite Row height.
- Click on OK.

2. What is the function of the AutoFit Selection feature?

The AutoFit Selection feature enables us to increase or decrease the column width according to the amount of data in the column. In this way, the data completely fills the column and there is no waste of space.

3. What is a formula? Describe the elements of a formula.

A formula expresses the relationship between several terms. Each term in a formula is represented by a symbol. We use formulas in Excel to perform calculations. Such formulas contain some standard elements. These are described below:

- Bracket contains the range of cells on which the operation is to be performed. They are represented as ().
- Operators represent the type of operation that is to be performed on the data. Operators are represented by the symbols +, -, *, /, ^, <, >, and =.
- Cell references indicate the cells that contain the data on which an operation is to be performed. They may be represented as A2:I2.
- Functions are pre-written formulas that help us to perform specific calculations. Some common functions are SUM, AVERAGE, MIN, and MAX.
- Values include numerical data such as 10, 5.4, and so on.
- Text includes data in the form of letters and characters. Lahore, Asif, and Total are examples of text.

4. What is the advantage of using functions? Answer with the help of an example.

The advantage of using functions is that they help us to avoid entering lengthy formulas. They enable us to perform a specific operation on a large range of cells. We do not need to enter an operator repeatedly. This helps us to save time and avoid making mistakes.

To find the total of values in the cells B4, C4, D4, E4, F4, we might use the formula

=B4+C4+D4+E4+F4.

We could also use the SUM function by typing =SUM(B4:F4).

In this way we do not have to enter each cell reference separately.

5. Why do we use charts on a worksheet?

We use charts on a worksheet because they present data in an interesting and attractive way. Charts use visual forms such as lines, bars, and diagrams to help us read and analyse data. Charts also allow people to form a general idea about the data without having to read a lot of data. They help us to know whether data is increasing or decreasing with time. **E. Write paragraphs to answer the following.**

1. Identify two situations where the AVERAGE function would be useful.

The AVERAGE function would be most useful for a teacher who wants to calculate the average percentage of the whole class. If the class contains 20 students then their individual percentage marks will give the average of the

whole class. This can show the students whose performance is above average, average, and below average. The AVERAGE function can also be used to find the average monthly expenditure on food, bills, fuel, etc. by a family in a year. The expenditure for 12 months can be added up and divided by 12 to find the average monthly expenditure.

2. How might the MAX and MIN functions be helpful to your teacher?

The MAX and MIN function can instantly tell a teacher who the top and bottom scorers in the class are. The same rule can be applied for each subject, e.g. Amina is the top scorer in mathematics with 95% marks and Haider is the bottom scorer with 52% marks.

Unit # 7 (Algorithms and flow charts)

Reading, Dictation

A. Answer the following questions.

1. **Why do we have to make selections? Explain with examples.**

We have to make selections because there are many occasions where we have to choose from two or more actions. For example, when we want to buy clothes, we have to select from several styles and designs. Similarly, when we compose a document on a word processor, we have to select which font colour or font size to use.

2. **What is a condition?**

A condition is a state that must be achieved for a certain event to take place. It is a necessary requirement for an action. A condition describes the things that must happen before we can take an action. A condition should be worded in the form of a question that has a Yes or No answer. If the condition is not satisfied, we cannot perform the specific action.

3. **When is a condition true? When is it not true?**

A condition should be worded in the form of a question that has a Yes or No answer. A condition is true when we can answer Yes to the question. A condition is not true when the answer to the question is No.

4. **How does the IF...THEN statement helps us in making a selection?**

The IF...THEN statement helps us in making a decision by specifying a condition and telling us what to do if the condition is true. If the condition is not true, we continue with the previous action.

5. **What is the difference between the IF...THEN statement and the IF...THEN...ELSE statement?**

The difference between the IF...THEN statement and the IF...THEN...ELSE statement is that the IF...THEN statement only tells us what to do if a condition is true. It does not tell us what to do if the condition is not true. However, the IF...THEN...ELSE statement tells us both what to do if a condition is true and what to do if the condition is not true.

6. **Write an algorithm using an IF...THEN statement for deciding whether to refuel a car while driving along the motorway.**

1. Check fuel level.
2. IF fuel level is close to EMPTY, THEN refuel car.
3. Drive on.

7. **Create an algorithm and a flow chart for deciding whether to buy a new television or a second-hand one.**

1. Find out cost of new television.
2. Find out cost of second-hand television.
3. Check family savings.
4. IF family savings > cost of new television, THEN buy new television, ELSE buy second-hand television.
5. Watch favorite programmes.

Write paragraphs to answer the following questions.

1. **Do only computers need step-by-step instructions? Describe three situations where you might need someone to give you step-by-step instructions. What would these instructions be like?**

Humans also require step-by-step instructions, because our brain processes information in steps and it is easier to remember. Step-by-step instructions can be helpful when one is following directions to a new or unfamiliar place. Applications like Google Maps make such activities easier. Step-by-step instructions are also helpful when taking an exam. Instructions such as 'Write your name and roll number on the answer sheet' are helpful for a student. Step-by-step instructions are also helpful when checking in for a flight and reaching the departure lounge.

SUBJECT

SCIENCE

Unit # 2 RESPIRATION AND ENERGY FROM FOOD

Reading, Dictation

WORKSHEET

Exercise and the rate of breathing

Materials needed: stopwatch, stop clock, or a watch with a second hand. Work with a friend.

Safety: If you suffer from asthma, bronchitis or any other breathing disorder, DO NOT over-exert yourself during this activity.

1. Sit quietly on a chair for a few minutes. Then ask your friend to count how many times you breathe in one minute. One breath means once in and out.
2. Do these three or four times and find the average.
3. Run around the playground or school hall until you are out of breath.
4. Sit down and ask your friend to count how many times you breathe in and out in a minute. Again, find the average of three or four counts.
5. Now count your friend's rate of breathing before and after exercise.
6. Record your results in this table:

Name	Before exercise	After exercise

- a) Whose rate of breathing is fastest a) when at rest _____ b) after exercise? _____
b) What happens to our rate of breathing when we have been exercising?

Answers to questions in the Students' Book

1. Breathing is the movement of air into and out of the lungs in order to obtain oxygen and to remove the waste carbon dioxide and water vapor. Respiration is the process by which energy is released from food using the oxygen that has been breathed in.
2. Respiration takes place in the cells of living organisms.
3. Comparison of burning and respiration:

Burning

Respiration

- ③ releases energy from a fuel
- ③ uses oxygen and releases carbon dioxide
- ③ releases energy rapidly and is difficult to control
- ③ involves heat and light (flames)

- ③ releases energy from a fuel (food)
- ③ uses oxygen and releases carbon dioxide
- ③ releases energy slowly and can be controlled
- ③ heat produced, but not light

4. You breathe faster and your heart rate increases when you run because the body needs more energy for respiration. The faster rate of breathing gets oxygen into the lungs faster and releases carbon dioxide and water vapour to the air more quickly. The heart pumps faster to speed up the supply of oxygen and dissolved food to the muscle cells and to carry away the waste products of respiration.
5. The parts of the body the air flows through on its way to the lungs are: mouth/nose—nasal cavity—voice box or larynx— trachea or windpipe—bronchi-bronchioles—alveoli or air-sacs.
6. When we breathe, the chest changes shape. These changes are brought about by the ribs and diaphragm. Muscles work to move these. The intercostals muscles raise the rib cage, while muscles pull the diaphragm down. When breathing in, the diaphragm is pulled down and the intercostals muscles contract pulling the rib cage upwards. The space inside the chest gets bigger, and air rushes into the lungs to fill up the extra space. Breathing out occurs when the muscles relax. The diaphragm moves upwards and the rib cage is lowered. The space in the chest gets smaller and air is forced out of the lungs.
7. It is better to breathe in through the nose than the mouth, because hairs and mucus in the nose and nasal cavity filter dust and germs from the air while the numerous blood capillaries warm the air.
8. The parts of the chest and lungs are: a=larynx or voice box; b=trachea or windpipe; c=rib; d=left lung; e=right bronchus; f=bronchioles; g=diaphragm.
9. Model of the chest and lungs:
 - i) The bell jar represents the chest and ribs, the Y-shaped tube is the trachea or windpipe and the bronchi, while the balloons represent the lungs, and the rubber sheet is the diaphragm.
 - ii) When the rubber sheet is pulled down, the balloons inflate with air slightly. When the rubber sheet is pushed up, the balloons empty of air.
 - iii) When the rubber sheet is pulled down, the same amount of air is in a larger space, therefore the air pressure is lower. When the rubber sheet is pushed up, there is the same amount of air in a smaller space, and its pressure is increased.
 - iv) This model is similar to the way we breathe in and out in that the diaphragm is also raised and lowered to change the air pressure in the chest cavity. The main difference is that in the human body, the ribs are raised and lowered by the intercostal muscles to make even larger changes to air pressure inside the chest.
10. A cough is a sudden involuntary or reflex action which helps to clear the large breathing passages of mucus and other secretions, as well as foreign particles and germs. Frequent coughing is often a sign of the presence of a disease. Coughing can also spread germs.

Colds are caused by viruses which invade the cells lining the nose and throat, causing them to break down. This gives you a sore throat and runny nose. As yet there is no cure for a cold, although some medicines can relieve some of the effects of the cold.

Influenza, or 'flu', is also caused by a virus, although it is a different virus from the one that causes colds, even though some of the symptoms are similar. The 'flu' virus enters the body through the eyes, nose or mouth and travels down towards the lungs. Once the virus is in the windpipe, bronchi, and bronchioles, it multiplies and multiplies. The first symptoms are a runny nose, sore throat, and cough. As the body tries to overcome the virus, it releases substances to try to fight it. These cause problems elsewhere in the body, including aching muscles, headaches, fever, and weakness. As with colds, there are medicines to relieve the symptoms of influenza, but no real cure. There are vaccines that can be injected to try to protect people against influenza, but the problem is that the virus keeps changing and it is impossible to produce vaccines quickly enough to fight each new form of the virus.

11. The main drug in tobacco smoke is nicotine, which is addictive, making it harder for the smoker to give up the habit. Nicotine also enters the blood from the lungs, affecting the blood system. Smokers get out of breath easily because carbon monoxide in the smoke joins on to the hemoglobin in red blood cells. This stops them from carrying oxygen. The tar in tobacco smoke collects in the lungs and irritates and damages the breathing tubes and air sacs or alveoli. Heavy smokers may develop bronchitis and emphysema, lung cancer, cancer of the voice box or larynx, and diseases of the arteries which supply the heart.

Unit # 3 Reading, Dictation

CHAPTER 3 THE HUMAN TRANSPORT SYSTEM

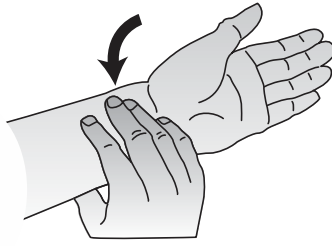
WORKSHEET

Exercise and the rate of heartbeat

Materials needed: stopwatch or watch with a second hand; chair or bench; use of the playground or school hall

Safety: If you have doubts about your physical fitness then do NOT carry out this activity.

1. Find the pulse in one of your wrists, as shown in the picture.



2. Count the number of beats in one minute.
3. Now stand still and swing both arms twenty times. Count your pulse as soon as you stop.
4. Ask a friend to hold a chair or bench steady while you step up and down from the seat forty times. Now count your pulse.
5. Finally run around the playground or school hall for two minutes. Count your pulse.
6. Ask two of your friends to do these tasks and to count their pulses.

Name	Number of pulse beats per minute:			
	at rest	after 20 arm swings	after 40 step-ups	after running for 2 minutes

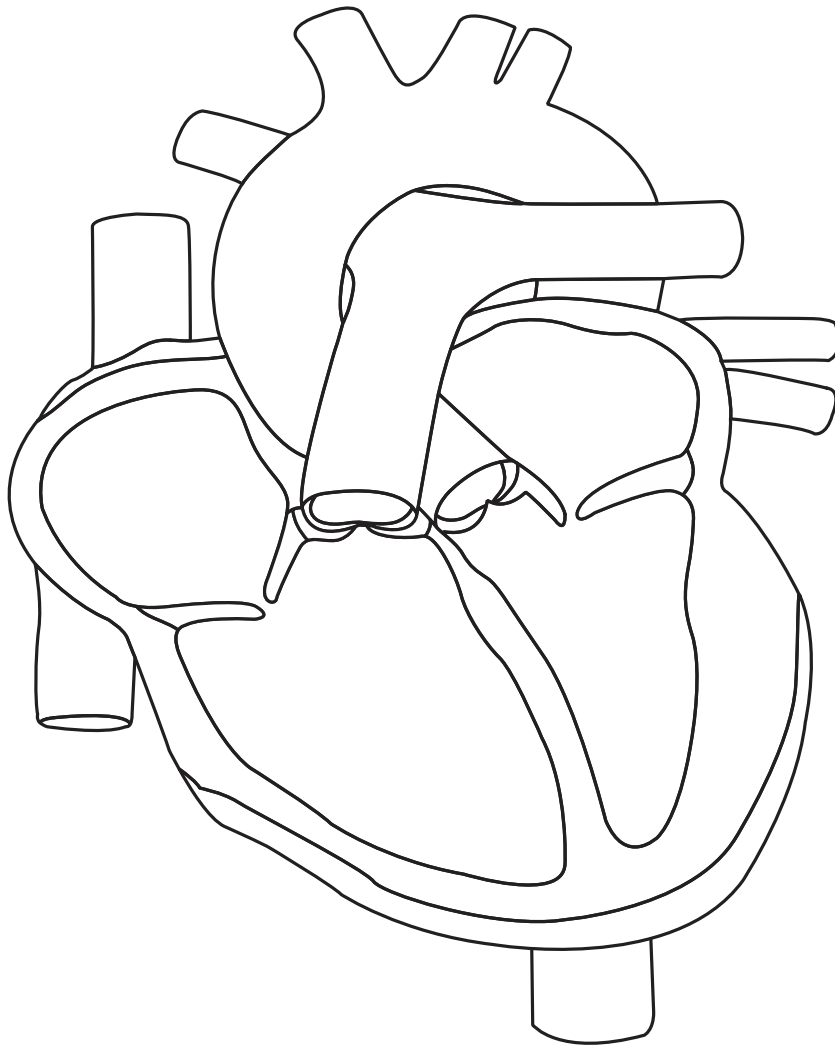
Record your results in this table:

Why does your pulse rate change during and after exercise?

Inside the human heart

Materials needed: pen; pencil; colored pencils, crayons, paints, or felt-tipped pens The diagram below shows the human heart with the front cut away to show the inside.

Color the diagram and label the parts.



Answers to questions in the Students' Book

1. The main job of the circulatory system is to transport, or carry, substances around the body.
2. The materials carried by the blood include dissolved food, water, oxygen, carbon dioxide, urea, and hormones.
3. The average human being has about 5 liters of blood.
4. The four main parts of the blood are: red blood cells which carry oxygen; white blood cells which help to kill germs and produce substances called antibodies. These kill germs and change the poisons produced by germs into harmless substances. Plasma is the liquid part of the blood. The red and white cells float in it and it contains many dissolved food substances, such as glucose, amino acids, vitamins, and mineral salts. The plasma also carries carbon dioxide and another waste product, urea, as well as hormones. Plasma also contains some blood proteins, including one called fibrinogen, which helps the blood to clot. Finally, there are platelets in the blood. These small cell fragments help to seal wounds by clotting the blood.
5. Hemoglobin is a protein combined with iron which enables the red blood cells to carry oxygen.

6. If the diet lacks iron, the body may not be able to make enough hemoglobin and so the blood will not be able to carry sufficient oxygen and the person will lack energy.
 7. A drop of oxygenated blood leaving the lungs passes to the left atrium of the heart. From there it is pumped to the left ventricle which pumps it into the main artery, the aorta. The drop of blood eventually reaches the blood capillaries which carry the blood into the tissues. As the blood leaves the tissues, the capillaries join up to form veins. Veins carry the blood back to the right atrium of the heart. An artery called the pulmonary artery then pumps the deoxygenated blood back to the lungs.
 8. Blood flowing from a cut vein is under very low pressure and so it is much easier to stop the flow of blood than it is from an artery.
 9. Blood spurts from a damaged artery because it is under high pressure, and the spurts are caused by each beat, or pumping action, of the heart.
-
10. All arteries carry oxygenated blood, except for the pulmonary artery which carries deoxygenated blood from the heart to the lungs. All veins carry deoxygenated blood, except for the pulmonary vein which carries oxygenated

Arteries	Capillaries	Veins
They carry blood from the heart.	They link arteries to veins.	They carry blood to the heart.
They have thick walls of muscle and elastic fibers.	The walls are one cell thick.	They have fairly thick walls which contain some elastic fibers.
Valves are present only where arteries leave the heart.	They have no valves.	Valves are found in the long veins of the arms and legs.
Blood flows in pulses.	Blood flows steadily.	Blood flows steadily.
Blood is under high pressure.	Blood pressure changes.	Blood is under low pressure.
Blood is bright red and contains oxygen (except in the pulmonary artery).	Blood is losing oxygen and gaining carbon dioxide.	Blood is dull red and contains very little oxygen (except in the pulmonary vein).

blood from the lungs to the heart.

11. a = pulmonary vein; b = left atrium; c = valve; d = left ventricle; e = right ventricle; f = right atrium; g = aorta or

main artery; h = vena cava or main vein; i = pulmonary artery

12. The table below shows the differences in structure and function of veins, capillaries, and arteries:
13. Varicose veins are veins that have swollen because the valves in the legs do not work properly. Blood collects in them instead of making its way back to the heart.

14. The people who are prone to developing blood-related diseases include people who are overweight, who eat a fatty diet, who do not exercise enough or who smoke heavily. Some people have an inherited tendency to blood-related diseases.
15. A pacemaker is a device which produces a small but regular pulse of electricity to the heart to keep it beating steadily. It is needed by a person whose natural pacemaker is faulty.
16. A valve in the heart or a vein stops the blood from flowing backwards. If the valves of the heart do not shut properly, the heart cannot work efficiently. Sometimes a faulty valve can be replaced with an artificial valve.
17. The level of glucose in the blood is controlled by a hormone called insulin. People who do not produce enough insulin have a disease called diabetes. The person with diabetes may feel weak and sleepy as the level of glucose in his or her blood changes, because fats and muscle proteins have to be used to supply the body with energy, the person loses weight. Diabetes can be controlled by injections or tablets of insulin, or by careful control of the diet.
18. A heart transplant is a life-saver for someone with heart failure. However, it is very difficult to find a replacement heart, usually from someone who has died in an accident, which the patient's own body will not reject. A major operation is needed to transplant a heart and special drugs have to be taken for the rest of the patient's life to reduce the risk of the body rejecting the new heart. Heart transplants lengthen the life of someone who would otherwise die from a seriously faulty heart.

Chapter # 4 (TRANSPORTS IN PLANTS)

Reading, Dictation

Answers to questions in the Students' Book

1. Large, many-celled plants need a transport system because it would take a long time for gases and other materials to diffuse into and out of the plant.
2. The two sets of tubes which make up the transport system of the plant are called phloem and xylem.
3. In a leaf, phloem and xylem tubes are found in the veins.
4. Water enters root hairs by a process called osmosis.
5. Xylem moves water and mineral salts from the roots to the leaves of the plant. Water enters the root hairs by osmosis, while some mineral salts enter the roots by diffusion. Other mineral salts enter the roots by what is called active transport. The main force which draws water up the plant is transpiration— the evaporation of water from the plant leaves.
6. The phloem cells carry dissolved food to storage areas, growing points, and other places where it is needed.
7. Most plants would die if they were watered with a strong salt solution. This is because the concentration of salts outside the root hairs would be higher than the concentration inside the root hairs. As a result, water would leave the root hairs by osmosis, and the plants would wilt and die.
8. A transpiration stream is the flow of water and dissolved mineral salts from the roots to the leaves. The water and mineral salts are pulled up the xylem tubes and water evaporates from the plant leaves.
9. The highest rates of transpiration would occur in hot, dry, or windy conditions in bright sunshine.

10. A potted plant on a sunny windowsill will soon start to wilt because water is evaporating from the leaves faster than it is being taken up by the plant roots.
11. The rate of transpiration is greatly reduced at night because light levels are lower, the stomata are closed, water is not needed for photosynthesis and the temperature is usually lower.
12. The leafy shoot lost 25 grams in weight. The beaker of water lost 4 grams. The water lost by the leafy shoot due to transpiration was, therefore, $25 - 4 = 21$ grams in four hours or 5.25 grams in one hour.
13. In summer it is better to water potted plants in the evening when the rate of transpiration is lower. The water has time to soak into the soil or compost and the plant roots can take up enough water to make up for that lost by transpiration during the day.

Unit # 5 (REPRODUCTION IN PLANTS)

Reading, Dictation

Answer to questions in the Students' Book

1. There are too many endangered plants to be able to list them here. In fact, a report produced by scientists in 2010 claimed that one-fifth of the world's plants are in danger of extinction. The main causes of the extinction of plants are loss of habitat—the clearance of vegetation for farmland, houses, roads, factories, etc.—and the use of chemical pesticides and fertilizers on farmland. Pollution of the air or water is another cause of pollution.
2. Working from the outside inwards, the four main parts of a flower are: sepals, which protected the flower at the bud stage; petals, which are often brightly colored to attract insects; stamens which are the male reproductive organs and which produce pollen; carpels which are the female reproductive organs.
3. Insect-pollinated flowers have fewer and larger pollen grains because, once an insect has been attracted to the flower and eaten some of the pollen grains or nectar, there is quite a high chance that it will accidentally carry some of the pollen grains to another flower of the same species. By contrast, wind pollinated plants have to rely on the wind carrying pollen to another plant of the same species. The pollen grains have to be small so that they blow along easily. There have to be very many of them because most will be wasted.
4. In a greenhouse, where there are no insects, cucumber or melon plants often have to be pollinated by hand. A stamen, or a small paint brush bearing pollen, is rubbed against the stigmas of the flowers so that fertilization can occur.
5. Pollination is the transfer of pollen from one flower to the stigma of another flower of the same species. Fertilization occurs after pollination. A tiny tube grows from the pollen grain down towards the ovary. A male nucleus from the pollen grain moves down the pollen tube and joins with the nucleus of the female sex cell, the ovule. When the two nuclei have fused together, the ovule is said to have been fertilized.
6. The nucleus in a pollen grain passes down the pollen tube inside the stigma of the flower to reach the ovary of the flower.
7. A fruit is formed from an ovary after fertilization. A seed develops from a fertilized ovule. When a seed starts to grow it is said to germinate. A cotyledon is another name for a seed leaf inside a seed. It contains stored food for the developing seedling. The embryo is the miniature plant inside a seed. The plumule is the first shoot or stem which grows from a seed as it starts to germinate. Dormancy is the resting or sleeping stage of a seed. A root hair

is a single-celled structure, found near the tip of a root, which absorbs water and dissolved mineral salts from the soil.

8. The main ways in which seeds are dispersed is by the wind, by animals, by water, and by explosive mechanisms.
9. Seeds formed in the autumn will not grow during the winter because the temperatures are too low for germination to occur. Seeds formed in dry weather will not grow because they need water to germinate.
10. i) The wall of the ovary grows to form the tomato fruit after fertilization; ii) The petals fall off after fertilization; iii) The sepals remain at the base of the fruit after fertilization.
11. Gardeners sometimes cut a potato tuber in half before they plant the two pieces, but they have to make sure that there is a bud, or 'eye', in each part.
12. Vegetable reproduction produces young plants that grow quickly and which are identical to the parent plants. Sexual reproduction produces seeds which are often slow to germinate. The seeds, however, contain characteristics of the plant from which the pollen grain came and characteristics of the plant on which the ovule was fertilized. Sexual reproduction can, therefore, be used to produce new types of plants.

Worksheet

1. The most important part of a plant for the continuation of the species is the:

- A) root B) stem C) leaf D) flower

2. In flowering plants, sexual reproduction involves the formation of:

- A) pollen B) seeds C) spores D) conifers

3. The order of the parts of a flower, from the outside inwards is:

- (A) sepals carpels, stamens petals (B) sepals, petals, stamens, carpels
(C) carpels, sepals, stamens, petals (D) petals, carpels, stamens, sepals

4. Where is the male sex cell in a plant?

- (A) pollen grain (B) ovule or egg-cell (C) anther (D) filament

5. Which of these is the female sex cell?

- (A) ovary (B) pollen grain (C) anther (D) ovule or egg-cell

6. The part of a flower to which pollen grains carried by insect's stick is called the:

- (A) Anther (B) stigma (C) ovary (D) moss

7. Hay fever is caused by the male cells of certain plants. These males' cells are contained in the:

- (A) ovules (B) pollen (C) anther (D) stigma

8. Which of these stages is the beginning of fertilization?

- (A) A pollen tube begins to grow. (B) The ovary turns into a fruit.
(C) Pollen lands on the stigma. (D) The ovule grows into a seed.

9. Because a watermelon fruit contains many seeds, we know that the normal flower of the watermelon contains large numbers of:

- (A) sepals and petals (B) very large anthers (C) ovules (D) stamens

10. Which of these conditions is NOT suitable for germination to occur?

- (A) warmth (B) cold (C) moisture (D) oxygen

11. Which of these is NOT a method of seed dispersal?

- (A) wind (B) animals
(C) explosive mechanisms (D) fog

12. You find a new fruit with a thin, flattened piece sticking out from it. How it is most likely to be dispersed?

- (A) wind (B) animals (C) water (D) explosively

13. What is the first part to emerge when a seed germinates?

- (A) embryo (B) cotyledon (C) plumule (D) radicle

14. Sexual reproduction is a big advantage to a species because it provides lots of:

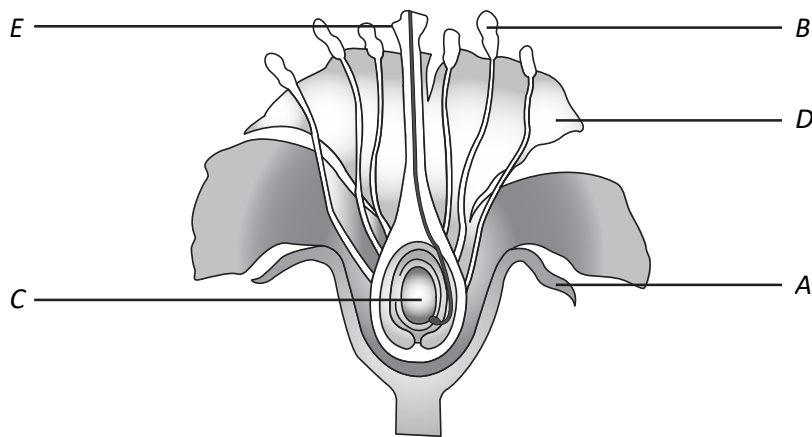
- (A) identical organisms (B) variation in the species
(C) energy for the species to survive (D) similar copies of the parent

15. When a strawberry plant produces a new plant without the formation of seeds, this type of asexual reproduction is called:

- (A) budding (B) binary fission (C) spore formation (D) vegetative reproduction

Question 17

The diagram below shows a flower that has been cut in half to show its reproductive organs.



Unit # 6 (ENVIRONMENT AND FEEDING RELATIONSHIPS)

Reading, Dictation

Answers to questions in the Students' Book

1. A habitat is the place where an organism lives and reproduces.
2. A habitat is the place where an organism lives and reproduces. The conditions in the organism's habitat, such as how hot, cold or wet it is, make up the organism's environment.
3. An ecosystem is all the plants and animals in a particular habitat and the way they interact with each other and their non-living environment. Examples of ecosystems include a pond, a rotting log, a forest, a desert, or even a large tree.
4. In order to survive, all animals need food, water, air or oxygen, shelter and protection, and somewhere to breed.
5. Adaptation is the way in which a plant or animal is suited to living in its particular habitat. If an animal is adapted to its environment then its body shape, color, type of food, and method of catching its food, are all suited to the place in which it lives.
6. A land animal's environment can change from one part of the day to another as the position of the Sun overhead changes, as the temperature rises and falls, and if it rains. A sea animal's environment might change with the tide. If the animals lived in a rock pool the water would become more and more salty as the Sun evaporated the water. The temperature of the water in the rock pool would also rise. If there was sudden heavy rain, the salt water in the pool would be diluted and its temperature would fall.
7. The main changes to a plant's environment from season to season would be in the amount of daylight and the temperature. In winter, there might be so little daylight with such low temperatures that the plant would become dormant until the spring.
8. The number of species that can survive in a habitat depends on how well each species is adapted to its environment, how much competition there is between the species for light, mineral salts and water in the case of plants, and for food, water and breeding sites in the case of animals. The number of species also depends on how much predation there is in the habitat. In other words, a species will survive if it can avoid being eaten by another species.
9. Some animals sleep or hibernate to survive cold winter weather. In hot, dry weather some animals undergo a special kind of rest or sleep called aestivation. Other animals avoid severe weather by migrating to places where food is more plentiful and the weather is better.

5. When energy is transferred between the links in a food chain, a great deal of it is lost at:

- (A) every stage (B) the first stage (C) the last stage (D) the middle stage

6. It is better for animals to eat plants because:

- (A) there is not enough meat to go around (B) there is a lot of land to grow plants on
(C) there is a greater variety of food (D) there is a more efficient transfer of energy

7. Rice is a good source of food because:

- (A) lots of things can be made from it (B) pests do not like it
(C) it does not need fertilizer (D) it contains lots of energy

8. Two organisms living together so that they both benefit from the relationship is called:

- (A) commensalism (B) mutualism (C) parasitism (D) saprophytes

9. A community is a collection of:

- (A) different organisms living in different places (B) different organisms living in the same place
(C) similar organisms living in different places (D) similar organisms living in the same place

10. A population is:

- (A) a group of organisms of the same species (B) a collection of habitats
(C) a group of different species (D) the number of different species

11. A farmer ploughed up 100 hectares of his land. What would happen if the land was left alone for 200 years?

- (A) It would stay bare soil. (B) It would be covered in grass and weeds only.
(C) It would be covered in grass and shrubs only. (D) It would be covered in grass, shrubs, and trees.

SUBJECT

ISLAMMIYAT

دعا کی اہمیت اور فضیلت

پڑھائی، املاء

۲۔ سوالات کے مختصر جوابات:

- (i) دعا بے چینی، افسردگی، مایوسی اور پریشانی کا بہترین علاج ہے۔
- (ii) دعا مانگنے کا بہترین طریقہ یہ ہے کہ پہلے اللہ تعالیٰ کی حمد و ثنا کی جائے، پھر رسول اللہ ﷺ پر درود بھیجا جائے، اس کے بعد پہلے اپنے لیے اور پھر دوسروں کے لیے دعا کی جائے۔ دعا کے آخر میں بھی درود پڑھا جائے اور دعا کے اختتام پر آمین کہا جائے۔ دعا چپکے چپکے اور ہلکی آواز میں مانگی جائے۔
- (iii) اللہ تعالیٰ کو عاجزی سے اور چپکے چپکے مانگی جانے والی دعا پسند ہے۔

زکوٰۃ - اہمیت اور فضیلت

ورک شیٹ

پڑھائی، املاء

- زکوٰۃ اسلام کا کون سا رکن ہے؟
- زکوٰۃ کن لوگوں پر فرض ہے؟
- نصاب سے کیا مراد ہے؟
- زکوٰۃ کن لوگوں کو دی جاسکتی ہے؟
- زکوٰۃ کن لوگوں کو نہیں دی جاسکتی؟
- عالیین زکوٰۃ سے کیا مراد ہے؟
- مسافر کو زکوٰۃ کے مصارف میں کیوں رکھا گیا ہے؟
- زکوٰۃ کن کن چیزوں پر ادا کی جاتی ہے؟
- اگر غربا کی ضرورتیں پوری نہ کی جائیں تو اس سے معاشرے میں کیا کیا مسائل جنم لے سکتے ہیں؟

ورک شیٹ

۲۔ مختصر سوالات کے جوابات:

- (i) سنہ ۸ ہجری
- (ii) لشکر مکہ میں بغیر کسی جنگ و جدل کے داخل ہوا اور شہر فتح ہو گیا۔
- (iii) حق آ گیا اور باطل نابود ہو گیا، بے شک باطل نابود ہونے والا ہے۔
- (iv) حضرت عثمان بن طلحہ رضی اللہ عنہ

۳۔ خالی جگہوں کے جوابات:

- (i) نابود ہو گیا (ii) وہ پناہ میں ہوگا (iii) ۳۶۰
- (iv) جو مال اللہ کی راہ میں چلا گیا ہے، مجھے اُس کی واپسی پسند نہیں ہے۔
- (v) ”اب میری زندگی اور موت تمہارے ساتھ ہوگی“۔

غزوہ حنین، ورک شیٹ

غزوہ تبوک

- بنو ہوازن اور بنو ثقیف اسلام کو اپنے لیے خطرہ کیوں تصور کر رہے تھے؟
- بنو ہوازن کی قیادت کون کر رہا تھا؟
- نبی اکرم ﷺ کو جب مشرکین کے ارادوں کی خبر ہوئی تو آپ ﷺ نے کیا اقدامات کیے؟
- مسلمانوں کے لشکر کی تعداد کیا تھی؟
- اللہ تعالیٰ کو مسلمانوں کی کون سی بات پسند نہ آئی؟
- مسلمانوں کا لشکر کیوں منتشر ہو گیا؟
- نبی اکرم ﷺ نے انصار و مہاجرین کو مخاطب کرتے ہوئے کیا فرمایا؟
- جنگ کا پانسہ کیسے پلٹ گیا؟
- طائف کا محاصرہ کیوں کیا گیا؟
- غزوہ حنین میں انصار کے چند نوجوانوں نے کس بات کا شکوہ کیا؟
- آپ ﷺ نے کیا فرمایا؟
- غزوہ حنین کے قیدیوں کے ساتھ کیا معاملہ کیا گیا؟
- غزوہ حنین سے ہمیں کیا سبق ملا؟

• سلطنت روم کے عیسائی بادشاہوں کو کس بات کا خطرہ محسوس ہوا؟

• قیصر روم نے کتنی فوج عیسائیوں کی مدد کے لیے روانہ کی؟

• رومیوں اور عیسائیوں کے حملے کے پیش نظر نبی کریم ﷺ نے کیا اقدامات کیے؟

• غزوہ تبوک کے دوران کس کس کو کس کس کا مشقہ دیا گیا؟

میانہ روی، پرھائی، املاء

ورک شیٹ

- اسلام کی میانہ روی سے متعلق تعلیمات کن معاملات کے لیے ہیں؟
- نبی کریم ﷺ نے اعتدال سے متعلق کیا فرمایا؟
- اخراجات میں میانہ روی سے کام نہ لیا جائے تو کیا کیا نقصانات ہو سکتے ہیں؟
- آواز اور گفتگو میں اعتدال سے کیا مراد ہے؟
- کن کن کاموں میں میانہ روی سے کام لینا چاہیے؟ وغیرہ

مشق

- ۱۔ ذیلی سوالات پر طلبا سے زبانی گفتگو کیجیے اور پھر انہیں اپنے الفاظ میں لکھنے کے لیے دیجیے۔
- ۲۔ مختصر سوالات کے جوابات:

- (i) کھانے پینے میں اعتدال نہ رکھنے سے صحت خراب ہو سکتی ہے، موٹاپا، بلڈ پریشر اور شوگر جیسی بیماریاں لاحق ہو سکتی ہیں۔
- (ii) عبادات، تعلیم، کھیل کود، تفریح، اخراجات، گفتگو وغیرہ غرض زندگی کے ہر معاملے میں میانہ روی اختیار کی جا سکتی ہے۔
- (iii) حضرت جابر بن سمرہ رضی اللہ عنہ فرماتے ہیں کہ ”میں رسول اللہ ﷺ کے ساتھ نماز پڑھا کرتا تھا، آپ ﷺ کی نماز میں بھی اعتدال تھا اور خطبہ بھی معتدل ہوا کرتا تھا، نہ بہت طویل اور نہ بہت مختصر۔“

- سخاوت کا مفہوم کیا ہے؟
- سخاوت کے بارے میں حضرت محمد ﷺ نے کیا فرمایا؟
- سورة البقرہ میں سخاوت کی کیا فضیلت بیان ہوئی ہے؟
- سورة اللیل میں بخل کی کیا مذمت بیان ہوئی ہے؟
- بخل کے نقصانات کیا ہیں؟
- وہ کون سی دو خصلتیں ہیں جو مومن میں جمع نہیں ہو سکتیں؟

ورک شیٹ

مساوات

- مساوات کے لفظی معنی کیا ہیں؟ اسلام میں برتری کا معیار کیا ہے؟
- خطبہ حجۃ الوداع کے موقع پر نبی کریم ﷺ نے مساوات سے متعلق کیا فرمایا؟
- حضرت عمر رضی اللہ عنہ نے بیت المقدس کے سفر میں مساوات کی کون سی زریں مثال قائم کی؟
- معاشرے میں مساوات نہ ہونے سے کیا کیا خرابیاں جنم لے سکتی ہیں؟
- مساوات کے ذریعے کن کن برائیوں کا خاتمہ کیا جاسکتا ہے؟

حضرت عائشہ صدیقہ رضی اللہ عنہا

۲۔ مختصر سوالات کے جوابات:

(i) حضرت عائشہ رضی اللہ عنہا جانتی تھیں کہ اسلام سے قبل عرب معاشرہ کیسا تھا، ان کے ہاں شادی بیاہ کی کیا رسومات تھیں، شادی اور طلاق کے لیے کیا طریقہ رائج تھا، حج کرنے اور روزہ رکھنے کے کیا طریقے رائج تھے۔

(ii) حضرت عائشہ رضی اللہ عنہا قرآن، حدیث، فقہ، تاریخ اور علم الانساب میں ماہر تھیں۔

(iii) عروہ بن زبیر رضی اللہ عنہ فرماتے ہیں کہ قرآن، حدیث، فقہ، تاریخ اور علم الانساب میں، میں نے حضرت عائشہ رضی اللہ عنہا سے بڑھ کر کسی کو نہیں دیکھا۔

(iv) حضرت عائشہ صدیقہ رضی اللہ عنہا کی تربیت خود رسول اکرم ﷺ نے فرمائی۔

(v) حضرت عائشہ رضی اللہ عنہا نے ۱۷ رمضان المبارک ۵۸ھ بمطابق ۱۳ جون ۶۷۸ء کو مدینہ میں وفات پائی اور جنت البقیع میں مدفون ہوئیں۔

SUBJECT

MATHEMATIC

Worksheet # 1

In worksheet on set we will solve 10 different types of questions. The questions on sets are basically related on elements of set and notation of a set, representation of a set, cardinal number of a set, and also types and pairs of set.

1. Which of the following are sets? Justify your answer.

- (a) The collection of all the days in a week beginning with the letter 'T'.
- (b) The collection of all difficult questions in the chapter on sets.
- (c) The collection of girls in your class.
- (d) The collection of all rivers in India.
- (e) The collection of all active teachers in the school.

2. If,

$$A = \{3, 5, 7, 9\}$$

$$B = \{2, 4, 6, 8, 10\}$$

$$C = \{12, 14, 18, 20, 24\}$$

$$D = \{21, 26, 31, 36\}$$

(a) State whether true or false.

- (i) $13 \in C$
- (ii) $6 \notin A$
- (iii) $9 \notin A$
- (iv) $24 \in C$
- (v) $31 \in D$
- (vi) $36 \notin D$
- (vii) $20 \notin C$
- (viii) $9 \in A$

(b) Fill in the blanks.

(i) $3 \in$ ___

(ii) $4 \in$ B

(iii) $26 \in$ C

(iv) $8 \in$ ___

(v) $5 \in$ A

3. Write the following sets in the descriptive form.

(a) A = The set of all even numbers less than 12

(b) B = The set of all prime numbers greater than 1 but less than 29

(c) C = The set of integers lying between -2 and 2

(d) D = The set of letters in the word LOYAL

(e) E = The set of vowels in the word CHOICE

(f) F = The set of all factors of 36

(g) $G = \{x : x \in \mathbb{N}, 5 < x < 12\}$

(h) $H = \{x : x \text{ is a multiple of } 3 \text{ and } x < 21\}$

(i) $I = \{x : x \text{ is perfect cube } 27 < x < 216\}$

(j) $J = \{x : x = 5n - 3, n \in \mathbb{W}, \text{ and } n < 3\}$

(k) $M = \{x : x \text{ is a positive integer and } x^2 < 40\}$

(l) $N = \{x : x \text{ is a positive integer and is a divisor of } 18\}$

(m) $P = \{x : x \text{ is an integer and } x + 1 = 1\}$

(n) $Q = \{x : x \text{ is a color in the rainbow}\}$

4. Write each of the following in set builder form.

(a) $A = \{5, 10, 15, 20\}$

(b) $B = \{1, 2, 3, 6, 9, 18\}$

(c) $C = \{P, R, I, N, C, A, L\}$

(d) $D = \{0\}$

(e) $E = \{ \}$

(f) $F = \{0, 1, 2, 3, \dots, 19\}$

(g) $G = \{-8, -6, -4, -2\}$

(h) $H = \{\text{Jan, June, July}\}$

(i) $I = \{a, e, i, o, u\}$

(j) $J = \{a, b, c, d, \dots, z\}$

(k) $K = \{1/1, 1/2, 1/3, 1/4, 1/5, 1/6\}$

(l) $L = \{1, 3, 5, 7, 9\}$

5. Write the cardinal number for each of the following.

(a) $X =$ The set of months in a year

(b) $Y =$ The set of letters in the word INTELLIGENT

(c) $Z =$ The set of prime numbers from 2 to 11

(d) $P = \{x : x \text{ is an even prime number}\}$

(e) $Q = \{x : x \text{ is a quadrilateral having 5 sides}\}$

(f) $R = \{x : x \in I, -5 < x < 2\}$

(g) $S = \{x \mid x \in W, x + 2 < 9\}$

(h) $T = \{x \mid x \text{ is a prime number which is a divisor of } 60\}$

(i) $V = \{x : x \text{ is a 2-digit number such that the sum of digits is } 6\}$

(j) $W =$ The set of hours in a day

6. Classify the following as finite and infinite sets.

- (a) $A = \{x : x \in \mathbb{N} \text{ and } x \text{ is even}\}$
- (b) $B = \{x : x \in \mathbb{N} \text{ and } x \text{ is composite}\}$
- (c) $C = \{x : x \in \mathbb{N} \text{ and } 3x - 2 = 0\}$
- (d) $D = \{x : x \in \mathbb{N} \text{ and } x^2 = 9\}$
- (e) $E = \{\text{The set of numbers which are multiples of } 3\}$
- (f) $G = \{\text{The set of letters in the English alphabet}\}$
- (g) $H = \{\text{The set of persons living in a house}\}$
- (h) $I = \{x \mid x \in \mathbb{I}, x < -2\}$
- (i) $J = \{x \mid x \in \mathbb{P}, p \text{ is a prime number}\}$
- (l) $K = \{\text{The set of fractions with numerator } 3.\}$

7. Identify the following as null set or singleton set.

- (a) $A = \{x \mid x \in \mathbb{N}, 1 < x < 2\}$
- (b) $P = \{\text{Point of intersection of two lines}\}$
- (c) $C = \{x : x \text{ is an even prime number greater than } 2\}$
- (d) $Q = \{x \mid x \text{ is an even prime number}\}$
- (e) $E = \{x : x^2 = 9, x \text{ is even}\}$
- (f) $R = \{\text{The set of whole numbers lying between } 0 \text{ and } 2\}$
- (g) $B = \{0\}$
- (h) $D = \{\text{The set of largest } 1 \text{ digit number}\}$
- (i) $F = \{\text{The set of triangles having } 4 \text{ sides}\}$
- (j) $H = \{\text{The set of even numbers not divisible by } 2\}$

8. From the sets given below, select the equal sets.

$$A = \{3, 5, 9, 13\}$$

$$B = \{2, 3, 4, 5\}$$

$$C = \{5, 9, 13, 15\}$$

$$D = \{4, 2, 5, 3\}$$

$$E = \{-2, 2\}$$

$$F = \{o, b\}$$

$$G = \{2, -2\}$$

$$H = \{1, 2\}$$

9. Are two sets A and B equal? Give reasons to support your answer.

(a) $A = \{x : x \text{ is a letter in the word SEAT}\}$

$$B = \{x : x \text{ is a letter in the word TASTE}\}$$

(b) $A = \{2, 6, 10, 14\}$

$$B = \{6, 2, 14, 16\}$$

(c) $A = \{1, 3, 5, 7, 9\}$

$$B = \{x : x \text{ is a positive odd integer } x \leq 9\}$$

(d) $A = \{0\}$

$$B = \{x : x > 15 \text{ and } x < 5\}$$

10. Which of the following pairs of sets are equivalent or equal?

(a) $A = \{x : x \in \mathbb{N}, x \leq 6\}$

$$B = \{x : x \in \mathbb{W}, 1 \leq x \leq 6\}$$

(b) $P = \{\text{The set of letters in the word 'plane'}\}$

$$Q = \{\text{The set of letters in the word 'plain'}\}$$

(c) $X = \{\text{The set of colors in the rainbow}\}$

$Y = \{\text{The set of days in a week}\}$

(d) $M = \{4, 8, 12, 16\}$

$N = \{8, 12, 4, 16\}$

(e) $A = \{x \mid x \in \mathbb{N}, x \leq 5\}$

Answers:

1. (a), (c), (d) and are sets.

Since they are well-defined collection of distinct objects.

2. (a) (i) False

(ii) True

(iii) False

(iv) True

(v) True

(vi) False

(vii) False

(viii) True

(b) (i) A

(ii) \subset

(iii) \notin

(iv) B

(v) \subset

3.

(a) $\{2, 4, 6, 8, 10\}$

(b) $\{2, 3, 5, 7, 11, 13, 17, 19, 23\}$

- (c) $\{-1, 0, 2\}$
- (d) $\{L, O, Y, A\}$
- (e) $\{O, I, E\}$
- (f) $\{1, 2, 3, 4, 6, 9, 12, 18, 36\}$
- (g) $\{6, 7, 8, 9, 10, 11\}$
- (h) $\{3, 6, 9, 12, 15, 18\}$
- (i) $\{64, 125\}$
- (j) $\{-3, 2, 7\}$
- (k) $\{1, 2, 3, 4, 5, 6\}$
- (l) $\{1, 2, 3, 6, 9, 18\}$
- (m) $\{O\}$
- (n) $\{\text{red, orange, yellow, green, blue, indigo, violet}\}$

4.

- (a) $\{x : x \text{ is a multiple of } 5 \text{ and } 5 \leq x \leq 20\}$
- (b) $\{x : x \text{ is a factor of } 18\}$
- (c) $\{x : x \text{ is a letter of the word 'Principal'}\}$
- (d) $\{x : x \in W \text{ and } x < 1\}$
- (e) $\{x : x \in N \text{ and } x < 1\}$
- (f) $\{x : x \in W \text{ and } 0 \leq x \leq 19\}$
- (g) $\{x : x = -2n \text{ and } n \in N \text{ and } 1 \leq n \leq 4\}$
- (h) $\{x : x \text{ is a month of the year beginning with J}\}$
- (i) $\{x : x \text{ is a vowel of the English alphabet}\}$
- (j) $\{x : x \text{ is a letter of the English alphabet}\}$
- (k) $\{x : x = 1/n, n \in N \text{ and } 1 \leq n \leq 6\}$
- (l) $\{x : x \text{ is odd, } x \leq 9\}$

5.

- (a) 12
- (b) 6
- (c) 5
- (d) 1
- (e) 0
- (f) 6
- (g) 7
- (h) 3
- (i) 6
- (j) 24

6.

- (a) infinite
- (b) infinite
- (c) finite
- (d) finite
- (e) infinite
- (f) finite
- (g) finite
- (h) finite
- (i) infinite
- (j) infinite
- (k) infinite

7.

- (a) null

(b) singleton

(c) null

(d) singleton

(e) null

(f) singleton

(g) singleton

(h) singleton

(i) null

(j) null

8. $B = D$ and $E = G$

9. Equal sets (a), (c) Elements same

10. Equal sets (a), (d)

Equivalent sets (b), (c), (e)

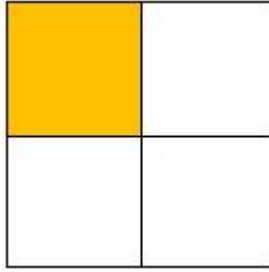
Chapter # 2

What is fraction?

A fraction is a number representing a part of a whole. The whole may be a single object or a group of objects.

A fraction is a number representing a part of a whole. A fraction can be expressed in the form a/b , where a , b are whole numbers and $b \neq 0$.

Take a piece of paper. Divide in to four equal parts as shown in the given diagram. Shade one part by some color. Now this shaded part is one of four parts. We say here that the shaded part is one-fourth of the total. 'One-fourth' is written as $1/4$.



The numbers like $\frac{1}{4}$, $\frac{2}{3}$, $\frac{3}{5}$, etc., are called *fractions*.

A fraction is quantity which expresses a part of whole. By the fraction $\frac{3}{5}$ we mean---Divide a quantity in to 5 equal parts and then take 3 parts of them.

There are two types of fractions ---*Common fraction and decimal fraction*. We shall now discuss about common fraction.

Common Fraction:

A fraction when expression by two natural numbers, one above the other, separated by a horizontal line is called a *common fraction*.

Thus, $\frac{3}{4}$, $\frac{1}{3}$, $\frac{7}{11}$, etc., are common fraction.

Numerator and Denominator of a Fraction:

In the fraction, the below of the horizontal line is called the *denominator*. It expresses the number of parts into which a quantity is divided.

The number above the horizontal line is called the *numerator*. It expresses the number of parts which are taken.

So, **Fraction = $\frac{\text{Numerator}}{\text{Denominator}}$**

In a fraction $\frac{a}{b}$ we call ‘a’ as numerator and ‘b’ as denominator.

The fraction representing two parts out of 7 equal parts in which the whole is divided is denoted by $\frac{2}{7}$ and is read as “*two-sevenths*”. In the fraction $\frac{2}{7}$, 2 is called the numerator and 7 is called the denominator.

Similarly, $\frac{3}{5}$ is a fraction with numerator 3 and denominator 5 and $\frac{12}{7}$ is a fraction with numerator 12 and denominator 7. Again similarly in fraction $\frac{3}{4}$, 3 is numerator and 4 is denominator.

In seventh grade fractions we will discuss mainly on these points with examples.

- A fraction whose numerator is lesser than the denominator is called a **proper fraction**.

- A fraction whose numerator is more than or equal to the denominator is called an **improper fraction**.
- A combination of a whole number and a proper fraction is called a **mixed fraction**.
- To get a fraction equivalent to a given fraction, we multiply (or divide) its numerator and denominator by the same non-zero number.
- Fractions with the same denominators are called **like fractions**. Otherwise, they are called **unlike fractions**.
- A fraction is said to be in its **lowest terms** if its numerator and denominator have no common factor other than 1.
- To **compare fractions**, we use the following steps:

Step I: Find the least common multiple (LCM) of the denominators of the given fractions.

Step II: Convert all fractions to its equivalent fraction with denominator is equal to the least common multiple (LCM) obtained in step 1.

Step III: Arrange the fractions in descending or ascending order by arranging numerators in descending or ascending order.

- To **convert unlike fractions into like fractions**, we use the following steps:

Step I: Find the least common multiple (LCM) of the denominators of the given fractions.

Step II: Convert each of the given fractions into an equivalent

- To **add (or subtract) fractions**, we may use the following steps:

Step I: Obtain the fractions and their denominators.

Step II: Find the least common multiple (LCM) of the denominators.

Step III: Convert all fractions into an equivalent fraction having its denominator equal to the least common multiple (LCM).

Step IV: Add (or subtract) like fractions obtained in Step III.

Worksheet # 2

In worksheet on fractions, the questions are based on comparing the fractions; arranging the fractions in ascending and descending order; find the sum and the difference of the fractions; equivalent fractions; simplifying fractions and also word problems on adding and subtracting fractions. This exercise sheet on fractions has different types of questions that can be practiced by the students to get more ideas to solve all types of questions in fractions for seventh grade math students.

1. Compare the following fractions by using the symbol $>$ or $<$ or $=$:

(i) $7/9$ and $8/13$

(ii) $11/9$ and $5/9$

(iii) $37/41$ and $19/30$

(iv) $17/15$ and $119/105$

2. Arrange the following fractions in ascending order:

(i) $3/8$, $5/6$, $6/8$, $2/4$, $1/3$

(ii) $4/6$, $3/8$, $6/12$, $5/16$

3. Arrange the following fractions in descending order:

(i) $4/5$, $7/10$, $11/15$, $17/20$

(ii) $2/7$, $11/35$, $9/14$, $13/28$

4. Write five equivalent fractions of $3/5$.

5. Find the sum:

(i) $5/8 + 3/10$

(ii) $7/9 + 5/12$

(iii) $4^3/4 + 9^2/5$

(iv) $5/6 + 3 + 3/4$

(v) $2^3/5 + 4^7/10 + 2^4/15$

6. Find the difference of:

(i) $13/24$ and $7/16$

(ii) 6 and $23/3$

(iii) $21/25$ and $18/20$

(iv) $3^3/_{10}$ and $2^7/_{15}$

(v) $3^1/_{5}$ and $7/10$

(vi) $15/7$ and $8/3$

7. Find the difference:

(i) $6/7 - 9/11$

(ii) $8 - 5/9$

(iii) $9 - 5^2/_{3}$

(iv) $4^3/_{10} - 1^2/_{15}$

8. Simplify:

(i) $2/3 + 1/6 - 2/9$

(ii) $12 - 3^1/_{2}$

(iii) $7^5/_{6} - 4^3/_{8} + 2^7/_{12}$

9. What should be added to $5^3/_{7}$ to get 12?

10. What should be added to $5^4/_{15}$ to get $12^3/_{5}$?

11. Patty studies for $5^2/_{3}$ hours daily. She devotes $2^4/_{5}$ hours of her time for Science and Mathematics. How much time does she devote for other subjects?

12. A piece of wire is of length $12^3/_{4}$ m. If it is cut into two pieces in such a way that the length of one piece is $5^1/_{4}$ m. What is the length of the other piece?

13. A rectangular sheet of paper is $12^1/_{2}$ cm long and $10^2/_{3}$ cm wide. Find the perimeter.

Answer:

1. (i) $7/9 > 8/13$

(ii) $11/9 > 5/9$

(iii) $37/41 > 19/30$

(iv) $17/15 = 119/105$

2. (i) $1/3 < 3/8 < 2/4 < 6/8 < 5/6$

(ii) $5/16 < 3/8 < 6/12 < 4/6$

3. (i) $17/20 > 4/5 > 11/15 > 7/10$

(ii) $9/14 > 13/28 > 11/35 > 2/7$

4. $6/10, 9/15, 12/20, 15/25, 18/30$

5. (i) $37/40$

(ii) $43/36$

(iii) $283/20$

(iv) $55/12$

(v) $287/30$

6. (i) $5/48$

(ii) $5/3$

(iii) $3/50$

(iv) $5/6$

(v) $5/2$

(vi) $11/21$

7. (i) $3/77$

(ii) $67/9$

(iii) $10/3$

(iv) $19/6$

8. (i) $11/18$

(ii) $17/2$

(iii) $145/24$

9. $46/7$

10. $22/3$

11. $2^{13}/_{15}$ hours

12. $7^{1}/_{2}$ m

13. $46^{1}/_{3}$ cm

SUBJECT

URDU

نظم: ایک آرزو..... (صفحہ ۱۵ تا ۱۶)

پڑھائی، املاء

الفاظ	معانی
ساغر	پیالہ، جام، کٹورا
جلوت	سب کے سامنے
خلوت	تنہائی، تنہائی کی جگہ
دلفریب	دل بھالینے والا
قبا	آگے سے کھلا ہوا لمبا کوٹ
سُرود	نغمہ، ایک قسم کا باجا
درا	گھٹنا، جرس
سُو	سمت، جانب
ہم نوا	ساتھی، دوست

توصیف کا خواب (صفحہ ۱۷ تا ۲۲)

پڑھائی، املاء

مشقی کام (حل شدہ):

- ۱۔ الفاظ کے معانی فرہنگ صفحہ ۱۶۷ پر ملاحظہ کیجیے۔
۲۔ محاورات کے لغت سے تلاش کردہ معانی اور ان کا جملوں میں استعمال:

جملے	معانی	محاورت
	حیران رہ جانا بے اختیار ہونا، دوسروں کے اشارے پر چلنا معاملات کا بالکل علم نہ ہونا درد بھری آواز	دنگ رہ جانا کٹھ پتلی بننا خاک نہ معلوم ہونا رقّت طاری ہونا
	روتے روتے سانس رُک جانا ماں کو سکون ہونا	پچکی بندھ جانا مامتا ٹھنڈی ہونا
	کیفیت کا بگڑنا محنت کرنا، کوشش کرنا	حالت رُدی ہونا جتن کرنا

۴۔ تفصیلی جوابات :

- (i) توصیف کی کوٹھی ایک عظیم الشان کوٹھی تھی ، یہ دریائے ہنگلی کے کنارے واقع تھی جس کے چاروں طرف سرسبز و خوشنما باغ مہک رہا تھا۔ توصیف کے سُسر (داؤد) نے یہ کوٹھی کئی لاکھ روپے کے صرف سے ایک گاؤں میں بنوائی تھی۔
- (ii) ایک غریب عورت جنگل بیاباں میں ایک جھونپڑی میں اپنے دو تین بچوں کے ساتھ رہتی تھی۔ سامنے والے گاؤں کے زمیندار نے اس غریب کا بچہ صرف چالیس روپے قرضہ ہونے کی وجہ سے اپنے پاس رکھ لیا تھا، جس کی یاد میں یہ عورت روتی رہتی تھی۔ (طلباء سے اُن کے الفاظ میں مزید تفصیلات شامل کروا کے لکھوائیے)
- (iii) اللہ کی خوشنودی کی خاطر توصیف نے شاندار مسجد تعمیر کروائی۔
- (iv) جب توصیف کا اپنا بیٹا کلیم شدید بخار کی وجہ سے بے ہوش ہوا تو اسے غریب عورت کا بیٹا کلیم یاد آیا۔
- (v) توصیف عورت کا ہاتھ پکڑے زمیندار کے گھر کی جانب چلی ، راستے بھر یہ غریب عورت بلبلاتی ، گڑگڑاتی اور یہ کہتی تھی : ”بیگم ! چالیس روپے بہت ہیں ، مگر میں ہاتھ جوڑوں گی اور دوں گی۔ پانچ روپے کے برتن تو میرے پاس ہیں۔ یہ لے جائیے۔ تین روپے کا ایک بل ہے ، باقی روپے جب تک میں نہ دوں آپ میرے کلیم کو اپنے پاس رکھ لیجیے۔ میں دُور سے ایک دفعہ روز دیکھ لیا کروں گی۔“ مگر توصیف اپنے بچے کی علالت کی وجہ سے اس قدر گم سم تھی کہ اس نے غریب کی کسی بات کا جواب نہ دیا۔ وہ زمیندار کے گھر پہنچی تو غریب عورت کے ساتھ توصیف کو دیکھ کر زمیندار کے اوسان گم ہو گئے۔ وہ بولا ، ”حضور آپ نے تشریف لانے کی زحمت کیوں کی ، مجھے بلوا لیا ہوتا۔“ توصیف نے جھٹ روپے نکالے ، زمیندار کو دیے اور بچہ لے کر غریب عورت کے حوالے کر دیا۔ غریب عورت نے فرط مسرت سے توصیف کو دیکھا اور بہت سی دعائیں دیں۔ (طلباء سے اُن کے اپنے الفاظ میں سے لکھوائیے)
- (vi) توصیف پریشانی کے عالم میں لیٹی کہ آنکھ لگ گئی ، خواب میں دیکھا کہ کوئی اُسے کہہ رہا ہے کہ ”توصیف ! خدا کا اصلی گھر تو پچھڑے ہوئے کلیم کی ماں کا دل تھا۔ تو نے اس کی مامتا کی مدد کی۔ تیرا بچہ تجھ کو مبارک ہو۔ تو نے غریب کلیم کو ملوا دیا۔ اٹھ تو بھی اپنے کلیم سے مل۔“
- ۵۔ جملوں کے مفہوم (اپنے الفاظ میں) درج ذیل ہیں :
- (i) جملہ : آدمی نہ آدم زاد ، سرد موسم ، شام کا وقت ، مسافت خاک نہ معلوم ہوئی۔
- مفہوم : پیش نظر جملہ سبق ”توصیف کا خواب“ سے لیا گیا ہے۔ سبق کے مصنف علامہ راشد الخیری اس جملے میں بیان کر رہے ہیں کہ توصیف اپنے شوہر موسیٰ کے ہمراہ باغ میں ٹہل رہی تھی۔ باتیں کرتے ہوئے دونوں دُور تک نکل گئے۔ جہاں نہ کوئی انسان تھا ، سردی کی شام تھی اور تھکن کا احساس بھی نہیں معلوم ہوتا تھا۔ ایک ایسی عمارت کے قریب رُکے جو بوسیدہ مسجد تھی۔ اس کی حالت کو دیکھ کر توصیف نے اسے نئے سرے سے بنوانے کا عہد کیا۔
- (ii) جملہ : دنیا بھر کے جتن کر ڈالے مگر حالت میں کسی طرح فرق نہ پڑا۔
- مفہوم : پیش نظر جملہ اُس وقت کا ہے جب توصیف کا بیٹا کلیم شدید بخار کے عالم میں تھا اور علاج معالجے کے باوجود بچے کا بخار نہیں اُتر رہا تھا۔ دنیا بھر کے جتن سے مراد یہ ہے کہ ہر طرح کے معالجین ، ڈاکٹر ، حکیم ، طبیب آزما لیے لیکن طبیعت بہتر نہ ہوئی تھی نہ ہوئی۔
- (iii) توصیف اپنے بچے کی علالت میں اس درجہ مستغرق تھی کہ اس کو دنیا و مافیہا کا کچھ ہوش نہ تھا۔

معانی	الفاظ
مزدوری	أُجرت
پونجی، اصل زر	سرمایہ
خلوص سے	مخلصانہ
وارث کی جمع (مردے کے مال کا جائز حق دار)	ورثا
کام کرنے والا	فعال
بھلائی و بہتری	فلاح و بہبود
تمام جانب	ہمہ جہت
ناز اور خوشی	فخر و انبساط
بچا ہوا، پیچھے رہا ہوا، بقایا	پسماندہ

ہم اور ہمارے خواب (صفحہ ۲۳ تا ۲۵)

پڑھائی، اطاء

جملے	معانی	محاورات
	تھک جانا	ہمتِ جواب دینا
	بوجھ اٹھانا	بار اٹھانا
	ارادے کا پکا	دھن کا پکا ہونا
	راستہ دکھانے والا	مشعلِ راہ ہونا

۲۔ مختصر جوابات :

- (i) فٹ بال دنیا بھر میں کھیلا جاتا ہے۔ اس کے کھیل کے لیے کثیر سامان کی ضرورت نہیں ہوتی۔ صرف ایک فٹ بال اور وسیع میدان درکار ہوتا ہے۔
- (ii) پوری دنیا میں سڑکوں پر زندگی گزارنے والے بچوں کی تعداد لاکھوں میں ہے۔ صرف پاکستان میں دس سال پہلے لگائے جانے والے اندازے کے مطابق ایسے ۱۴ سے ۱۵ لاکھ بچے ہیں۔
- (iii) اسٹریٹ چائلڈ ورلڈ کپ دراصل بچوں کی فلاح و بہبود کی ایک تحریک ہے جو برطانیہ کی انسانی حقوق و بہبود کی تنظیم ”آموس ٹرسٹ“ نے شروع کی تھی اور یہ تحریک پانچوں براعظموں سے بے گھر بچوں کو کھیل کے مواقع کی فراہمی، فٹ بال، آرٹ اور ان کے لیے مختلف سرگرمیاں کروانے کے لیے بہت فعال ہے۔ اس کا مقصد ان بچوں کے بارے میں منفی تاثر ختم کرنا اور ان کی بحالی ہے۔
- (iv) دوسرا اسٹریٹ چلڈرن فٹ بال ورلڈ کپ مارچ ۲۰۱۴ء کو برازیل کے شہر ریوڈی جنیرو میں منعقد ہوا۔
- (v) دوسرے ورلڈ کپ میں پاکستانی ٹیم نے ۰-۱۳ سے بھارت کو شکست دی اور سب کو حیران کر دیا۔ یہ بچے یکے بعد دیگرے مقابلے جیتتے گئے۔ سخت مقابلوں کے بعد کئی کانسی کے تمغے جیتے۔ ان کی یہ جیت پاکستان کے لیے فخر و انبساط کا باعث بنی۔
- (vi) بے گھر بچوں کو کھیلنے کے اور اپنی زندگی بہتر بنانے کے مواقع دیے گئے، جہاں انھوں نے اپنی صلاحیتوں کو استعمال میں لا کر نہ صرف اپنی دنیا بدلی بلکہ وطن کے لیے فخر کا سبب بنے۔

گھریلو ملازمہ نے نوٹیل انعام پایا..... (صفحہ ۳۵ تا ۴۰)

پڑھائی، املاء

۲۔ محاوروں کے لغت سے تلاش کردہ معانی اور ان کا جملوں میں استعمال :

جملے	الفاظ
	نیرنگیاں پیوست ماہیت فُضْلہ سنگِ میل مشعلِ راہ

۴۔ مختصر جوابات :

- (i) اپنی ماں کے انتقال کے وقت ماریا کی عمر تقریباً گیارہ سال تھی۔
- (ii) ماریا کے والد کو اپنے وطن کی آزادی کی جدوجہد کرنے کی وجہ سے ملازمت سے برطرف کر دیا گیا۔
- (iii) بے حد مشکلات کے باوجود ماریا کی ہمت نے جواب نہیں دیا کیونکہ وہ دُھن کی کچی تھی۔
- (iv) ماریا ۱۸۹۱ء میں فرانس کے لیے روانہ ہوئی۔
- (v) فرانس میں تعلیم کے حصول کے لیے فرانسیسی زبان پر عبور حاصل کرنا ضروری تھا۔
- (vi) پیرے کیوری فزکس کے مضمون میں اعلیٰ صلاحیت کے مالک تھے۔
- (vii) یورینیم کی راکھ سے نئے مادے کو علیحدہ کرنے میں چار برس کا عرصہ لگا۔
- (viii) مادام کیوری نے اپنے تجربات کے نتائج ایک ڈائری میں لکھے ہیں۔
- (ix) مادام کیوری کی تحقیق کی سمت میں مزید تحقیق کی بدولت رودر فورڈ نے گاما اور بیٹا شعاعوں کی نشاندہی کی۔
- (x) مادام کیوری کا دریافت کردہ ، مادہ کینسر جیسے موذی مرض کے علاج میں معاون ہوا۔

۵۔ تفصیلی جوابات :

- (i) ماریا نے اپنی بہن کو فرانس بھیجنے اور اس کی تعلیمی اخراجات کو پورا کرنے کی ذمہ داری لے کر ایثار کا مظاہرہ کیا۔ اس مقصد کے لیے اس نے شہر کے ایک کھاتے پیتے گھرانے میں بچوں کی دیکھ بھال کرنے کی ملازمت کی۔
- (ii) ماریا کو اپنی بہن کے گھر میں بہت ساری سہولیات میسر تھیں ، جیسے وقت پر کھانا ، دل بہلانے کے لیے بڑی بہن ، ہم وطنوں سے میل جول کے مواقع وغیرہ۔ اس گھر کو چھوڑنے کا سبب فرانسیسی زبان سیکھنے کے مواقع کا نہ ہونا تھا۔
- (iii) ماریا اپنی بہن کے گھر کو چھوڑ کر سوربون یونیورسٹی کے پاس ایک کرائے کی کوٹھڑی میں رہی۔ یہ کوٹھڑی مکان کی تیسری منزل پر تھی ، جہاں چڑھنا اترنا مشکل تھا۔ پھر کھانے کا بندوبست مناسب نہیں تھا اور اکثر ماریا کو بھوکا رہ جانا پڑتا تھا۔
- (iv) ایکٹرون پر کی گئی تحقیق اور تجربے کی راہ پر چل کر ولہلم رونجن نے ایکس رے کی دریافت کی۔ ایکس رے کے فائدے بے شمار ہیں۔ جسم کی جراحی یعنی کاٹے بغیر اندرونی تصاویر کے حاصل ہونے سے ڈاکٹروں اور معالجین کو امراض کا سراغ لگانے میں آسانی ہوگئی ہے۔
- (v) مشکلات کا مقابلہ کرتے ہوئے مادام نے سچی لگن کی بدولت اپنی منزل پائی اور اپنی زندگی کو با مقصد بنایا۔ اسی لیے مادام نے اس دور کو اپنے لیے خوشیوں کا دور قرار دیا۔ کچھ پالینے کی کوشش کرنا اور اس میں اپنا تن من دھن قربان کر دینا انسان کو ایسی خوشی فراہم کرتا ہے جس کا لفظوں میں بیان ممکن ہی نہیں۔
- (vi) شادی کے بعد پیرے کیوری اور مادام کیوری نے تابکاری کے اس نئے عنصر کی مناسب مقدار حاصل کرنے کے کام کو روایتی ڈھنگ سے کرنے کا فیصلہ کیا۔ انھوں نے بوہمیا کی کانوں سے یورینیم کی چھنی ہوئی کٹی ٹن راکھ حاصل کی اور اُس میں سے نئے مادے کے علیحدہ کرنے کا صبر آزما کام شروع کیا۔ اپنے اس کام میں دھن کے پکے یہ دونوں سائنسدان چار برس تک لگ رہے۔ اسی دوران ماریا کی بڑی بیٹی ایرین پیدا ہوئی۔ اپنے تجرباتی کام کو یہ دونوں سائنسدان اپنے مکان کے صحن میں ایک شیڈ کے نیچے کرتے تھے اور یہ شیڈ اتنا خراب تھا کہ اس میں سے پانی ٹپکتا رہتا تھا۔ ماریا بالٹی بھر بھر کر راکھ لاتی اور اُسے پکاتی تھیں۔ پیرے کیوری حاصل شدہ فضلے پر تجربہ کرتے۔ چھت میں چینی نہ ہونے کی وجہ سے پکاتے وقت نکلنے والی گیس اُن کے جسم میں داخل ہو رہی تھی۔ لیکن دونوں اس کے مضر اثرات سے بے خبر تھے۔ اس گیس کے ذریعے سے اُن کے جسم میں پیدا ہونے والے تابکاری کے اثرات بڑی حد تک آگے چل کر پیرے کیوری ، مادام کیوری اور اُن کی بڑی بیٹی ایرین کی موت کا سبب بنی۔

اپنی ڈائری لکھا کرو..... (صفحہ ۴۱ تا ۴۴)

پڑھائی، اطاء

مشقی کام (حل شدہ):

۱۔ الفاظ معانی فرہنگ صفحہ ۱۸۱ پر ملاحظہ کیجیے۔

۲۔ محاورات کا جملوں میں استعمال:

جملے	محاورات
	جی پر کھیل جانا تئی کھڑی ہونا پانی پھیر دینا رگ حمیت پھڑکننا

- نظم ”بارش کا پہلا قطرہ“ کا مرکزی خیال ہمت اور خود اعتمادی ہے۔ کسی بھی اچھے کام میں پہل کرنے کے لیے ہمت درکار ہوتی ہے۔ بہت سے خوف اور اندیشے لاحق ہوتے ہیں۔ کوئی نہیں کر رہا، میں کروں گا تو کتنا عجیب لگے گا۔ کتنی شرم آئے گی، اگر میں یہ نہ کروں تو بھی کیا فرق پڑے گا، میری کیا اہمیت ہے، مجھ سے بہتر لوگ بیٹھے ہیں وغیرہ۔ شاعر نے بارش کے پہلے قطرے کے لیے جو صفات تحریر کی ہیں، مثلاً دلاور ہونا، ہمت والا ہونا، فیاض، نیک نیت ہونا، وہی صفات انسانوں کو بھی درکار ہیں۔ ان صفات سے مدد لے کر جب کوئی اچھے کام میں پہل کر دیتا ہے تو مدد ہر طرف سے آجاتی ہے۔ اطراف کے لوگ، اسباب بلکہ یوں کہیے کہ تمام کائنات ساتھ دیتی ہے۔ اسی لیے بارش کا پہلا قطرہ بنا ایک ضرب المثل کے طور پر استعمال کیا جاتا ہے۔
- اس قطرے کی بہادری نے قطروں کی انفرادی سوچ کو تبدیل کر دیا اور سب نے اس کا ساتھ دیا، اسی طرح افراد کمزور ہوتے ہیں لیکن جب اتحاد و اتفاق سے وہ قوم بنتے ہیں تو ان کی طاقت کا کوئی مقابلہ نہیں کر سکتا۔
- ۴۔ کالی گھٹائیں برسنے کے لیے کھڑی تھیں مگر کسی قطرے کی مجال نہ تھی کہ وہ بادل کی حدود سے باہر آجائے۔ کیونکہ ہر قطرہ اپنے آپ کو اس قابل نہیں سمجھ رہا تھا کہ وہ برسے۔ قطروں کی آپس کی سرگوشیاں ان خیالات پر مشتمل تھیں کہ ہم تو اتنے چھوٹے قطرے ہیں، کسی کی پیاس تک نہ بچھا پائیں گے، کھیتوں کو سیراب کرنا تو دور کی بات ہے۔ نیچے گرنے سے گرم پتھروں کی گرمی ہمیں بخارات میں تبدیل کر دے گی، کسی کے ہاتھ ہی خالی ہوں تو وہ کسی کو کیا دے سکتا ہے۔
- ۵۔ ایک قطرہ جو بہت بہادر اور سخی تھا اور جس کی نیت پُر خلوص تھی، اس کی غیرت نے جوش مارا اور اس نے دوسرے قطروں سے کہا، میرے ساتھ قدم بڑھاؤ اور اس مُردہ زمین پر برس کر احسان کرو۔ یہ سوچ بچار کا وقت نہیں۔ یہ بل چل ختم کرو اور وہ کرو جو تم کر سکتے ہو۔ سب مل کر پُر جوش اور سرگرم ہو جائیں اور اس زمین پر پانی برسائیں۔ سب سے بر ملا کہہ کر وہ وہاں سے روانہ ہو گیا۔ جو چند قطرے بے حیثیت تھے انھوں نے اس سخی کی بات سُن کر بڑی ہمت کی اور وہ قطرہ قطرہ بوندوں کی شکل میں برسے اور دیکھتے ہی دیکھتے بارش کی شکل اختیار کر گئے۔ ہر چیز بارش سے سیراب ہوئی، تمام مخلوق بھی خوشحال ہوئی۔

معذور بچہ دنیا کا سب سے بڑا موجد بنا..... (صفحہ ۲۸ تا ۵۰)

پڑھائی، اطاء

مشقی کام (حل شدہ):

۱۔ الفاظ، معانی اور جملے:

جملے	معانی	الفاظ
	کام کرنے والا، کاریگر بے ترتیب طریقے سے یا بغیر منصوبے کے منہ سے طلب کی ہوئی قیمت یا دام	مستری بے ڈھنگا منہ مانگی قیمت
	خدا کی دی ہوئی قدرتی، فطری ایک کیمیائی مادہ	خدا داد فاسفورس
	مضبوطی، مستقل مزاجی حرکت کرنے والا	استقلال متحرک

۳۔ تفصیلی جوابات :

- (i) ایڈیسن پندرہ برس کا تھا۔ ریل کے سفر کے دوران اس نے ایک تجربہ کیا کہ ایک ڈبے میں فاسفورس کی کثیر مقدار ڈال دی ، جس کے نتیجے میں آگ بھڑک اٹھی۔ ریل کے گارڈ کو غصہ آیا۔ پہلے تو اُس نے ایڈیسن کا سارا سامان باہر پھینک دیا اور پھر ایڈیسن کے کان پر ایک ٹکڑا مارا جس کے نتیجے میں ایڈیسن کی قوت سماعت متاثر ہوئی اور وہ بہرا ہو گیا۔
- (ii) بہرے پن کے بارے میں ایڈیسن اکثر کہا کرتا تھا کہ ”بہرا پن میرے لیے رحمت ثابت ہوا ہے۔ اب میری ساری توجہ کام کی طرف لگی رہتی ہے اور فضول باتیں سننے میں وقت ضائع نہیں ہوتا۔“
- اس کا رویہ اس بات کو ظاہر کر رہا ہے کہ وہ مثبت سوچ کا حامل انسان تھا، اپنی اتنی بڑی معذوری کو بھی اپنے لیے نعمت سمجھنا اُس کی مثبت طرز فکر کی نمائندگی کرتا ہے۔ ایسا کرنے والے زندگی میں کبھی منفی سوچ نہیں رکھتے اور کامیاب ترین زندگی گزارتے ہیں۔
- (iii) ایڈیسن دنیا کا سب بڑا موجد تھا۔ اُس نے ایک ہزار سے زیادہ چیزیں ایجاد کیں۔ ان میں گراموفون ، بجلی کا بلب ، سینما ، تار برقی ، ٹیلی فون ، فونوگراف ، کائناٹوگراف ، کائناٹو اسکوپ وغیرہ شامل ہے۔

- (v) ایڈیسن کی دلچسپ ایجاد ایک کیمرہ ہے جس کا نام کائناٹوگراف ہے۔ یہ دنیا کا پہلا ایسا کیمرہ تھا جو سیلو لائڈ کی فلم پر چلتی پھرتی تصویریں اُتارتا تھا۔ اس کے ساتھ ہی اُس نے کائناٹو اسکوپ نامی ایک اور مشین بنائی جو اُس فلم کو پردے پر دکھاتی تھی۔ ایڈیسن نے اس کے ساتھ فونوگراف لگایا تو متحرک تصویریں باتیں بھی کرنے لگیں۔

چچا چھلکن نے رڈی نکالی (صفحہ ۷۰ تا ۷۸)

پڑھائی، املاء

مشقی کام (حل شدہ):

۱۔ الفاظ کے معانی فرہنگ صفحہ ۱۸۱ پر ملاحظہ کیجیے۔

۲۔ کثیر الانتخابی جوابات:

(i) کمرے (ii) قفل (iii) کاغذات (iv) وقت (v) کھسانے

۳۔ مختصر جوابات:

- (i) یہ واقعہ جمعہ کے دن کا ہے۔
- (ii) چچی دالان میں بیٹھی بنو کی اورٹھنی میں لپکا ٹانک رہی تھیں۔
- (iii) بچوں کے استاد کو پڑھانے کے لیے ایک کمرہ درکار تھا۔
- (iv) کمرہ خالی کرنے کی ذمہ داری چچا جان نے لی۔
- (v) الماریوں کو کھول کر دیکھنے پر چچا جان کی حالت بُری ہو گئی کیونکہ اُن میں بہت سارے کاغذات ٹھونسے گئے تھے۔
- (vi) اس وقت انھیں چچی کی صلاح کہ کمرہ کھول کر الماریوں میں قفل ڈال دیے جائیں، بڑی بامعنی لگ رہی تھی۔
- (vii) چچا جان نے ایک ہاتھ پر کام کے کاغذات کا ڈھیر اور دوسرے ہاتھ پر رڈی کا ڈھیر بنا کر کاغذات کو تقسیم کیا۔
- (viii) کام کے بعد تعطیل کے لیے بندو کو آواز دی کہ پان لائے اور مودے کو حقہ تازہ کر کے لانے کے احکامات دیے۔
- (ix) چچا جان پھیلائے گئے کام سے جان چھڑانے اور چچی جان کا دھیان ہٹانے کے لیے تیل لا کر دینے کی پیش کش کر رہے تھے۔
- (x) رات کو چچی کمرے میں آئیں تو کمرہ صاف ستھرا تھا۔ الماریوں میں قفل بھی لگا دیے گئے تھے۔

۴۔ تفصیلی جوابات:

- (i) استاد کو بچوں کو پڑھانے کے لیے کمرہ اس لیے درکار تھا کیونکہ استاد کا خیال تھا کہ بچوں کو پڑھانے کے لیے ایک الگ کمرہ بھی ہو جائے گا، جہاں اُن کی چیزیں ٹھکانے پر رہیں گی۔ دوسرا بچے توجہ سے پڑھ سکیں گے۔
- (ii) چچا چھلکن، کھٹل مارنے کی غرض سے دالان میں کھڑے، پاپوں کی چولوں میں اُبلتا پانی ڈلو اور ہے تھے اور چچی سے کہہ رہے تھے کہ یہ بڑا نایاب اور مجرب نسخہ ہے، جب کبھی آزما یا تیر بہدف پایا۔
- (iii) چچا نے جب کمرہ خالی کرنے کی ذمہ داری لی تو ان کے سابقہ کاموں کے نتائج کے پیش نظر چچی جان پریشان ہو گئیں۔ وہ جانتی تھیں کہ اس کام کو ہاتھ میں لینے کا نتیجہ کیا ہوگا۔

مجاورات	جملے
بھڑک اٹھنا پل پڑنا گتھ جانا دل میں پھانس چبھنا خاک نہ ہونا	

۶۔ الفاظ اور ان کے متضاد:

الفاظ	متضاد	الفاظ	متضاد
ٹھکانہ		بر محل	
پُر لطف		ترتیب	
ادھورا		فکر مند	

نظم: آدمی نامہ..... (صفحہ ۷۶ تا ۷۸)

مشقی کام (حل شدہ):

۱۔ الفاظ کے معانی فرہنگ صفحہ ۱۸۱ پر ملاحظہ کیجیے۔

امثال: ے سا قیا! یاں لگ رہا ہے چل چلاؤ

جب تلک بس چلے ساغر چلے

(خواجہ میر درد)

ے یاں لطف و کرم تم نے کیے ہم پہ ہیں جو جو

تم سب کی یہ خوبی ہے، کہاں ہم سے بیاں ہو

(نظیر اکبر آبادی)

۵۔ الفاظ اور ان کے جملے:

الفاظ	جملے
مفلس دعویٰ بہشت حقیر کہار اشراف	

۳۔ مختصر جوابات :

- (i) نظم ”آدمی نامہ“ کے شاعر نظیر اکبر آبادی ہیں۔
(ii) نظیر کو ”عوامی شاعر“ کہا جاتا تھا۔
(iii) فرعون، شداد اور نمرود نعوذ باللہ خدائی کے دعویدار تھے۔

۴۔ تفصیلی جواب :

(i) مرکزی خیال :

نظم آدمی نامہ کے شاعر نظیر اکبر آبادی ہیں۔ نظم کا مرکزی خیال یہ ہے کہ دنیا میں بہت سے کردار ہمیں چلتے پھرتے، اچھے بُرے کام کرتے، مختلف ذمہ داریاں اٹھاتے نظر آتے ہیں۔ لیکن درحقیقت وہ اسی حضرت انسان کے مختلف روپ ہیں۔ نیکی میں فرشتوں کو مات دینے والا بھی انسان ہے اور بُرائی میں شیطان کو مات دینے والا بھی ایک آدمی ہی ہے۔

مرزا نکتہ..... (صفحہ ۷۹ تا ۸۱)

پڑھائی، املاء

مشقی کام (حل شدہ):

۱۔ لغت سے تلاش کردہ الفاظ کے معانی:

الفاظ	معانی
ستم ظریف	مذاق میں ظلم کرنے والا
تکتہ شناسی	زیرک ہونا، ذہین، تیز فہمی
وصف	کمال، خوبی
پرلے درجے	بے حد، انتہائی
غلبہ	فوقیت، برتری
خطبی	دیوانہ، پاگل
طرز استدلال	دلیل دینا
تردید	رد کرنا، جواب دینا
ترک کرنا	چھوڑنا
برافروختہ	آگ پر رکھا ہوا، جلتا ہوا، غصے میں بھرا ہوا
واہیات	بے ہودہ، فضول
مسلمہ	تسلیم شدہ امور
کمپس	سمت دیکھنے کا آلہ
تکتہ چیں	عیب ڈھونڈنے والا
تکتہ رس	تیز فہم، زیرک
یکے بعد دیگرے	ایک دوسرے کے بعد
یک لخت	فوراً، تمام
استفسار	دریافت کرنا، پوچھ گچھ
خدا واسطے کا بیر	ناحق دشمنی، بے جا عداوت
بچے جھاڑ کر پیچھے پڑنا	پیچھے لگ جانا، نہایت تنگ کرنا

۲۔ محاورات ، معانی اور جملے :

محاورات	معانی	جملے
گھٹی میں پڑنا خدا واسطے کا بیر ہونا	بچپن سے کسی عادت کا ہونا بے جا عداوت ، ناحق دشمنی	
آڑے ہاتھوں لینا گھر جانا	لتاڑنا ، سختی سے پیش آنا رنج اور پریشانی میں مبتلا ہونا	

۳۔ تفصیلی جوابات :

- (i) مرزا کو ان کی ہر بات میں نکتہ پیدا کرنے کی عادت کی وجہ سے یہ لقب ملا۔
- (ii) مرزا نکتہ میں یہ وصف تھا کہ وہ بات بات میں ایسا نکتہ پیدا کرتے تھے کہ اگر انھیں کوئی دوسرا کہتا تو لوگ اُسے یقیناً پاگل یا جنگلی سمجھتے۔ لیکن مرزا کے سن و سال کا لحاظ کرتے ہوئے انھیں محض مرزا نکتہ کہا کرتے۔
- (iii) مرزا کی حاضر جوابی اور طرز استدلال کی وجہ سے مصنف نے ان سے راہ و رسم پیدا کرنے کا فیصلہ کیا۔
- (iv) مرزا سے دوستی کرنے کے بعد مصنف پر یہ راز کھلا کہ ان سے دوستی کر کے انھوں نے بہت بڑی مصیبت مول لی ہے۔ اختلاف مرزا کی گھٹی میں پڑا ہے۔
- (v) اختلاف کی یہ تینوں مثالیں طلبا سے اخذ کروائیے۔
- (vi) ماہ جنوری میں شام کے وقت کڑا کے کی سردی پڑ رہی تھی ، یک لخت مطلع تاریک ہو گیا۔ تھوڑی دیر بعد اولے پڑنے لگے۔ مصنف ، مرزا کے ساتھ موسم کا نظارہ کر رہے تھے کہ مصنف نے مرزا سے کہا ، ”اگر کوئی شخص ان اولوں میں گھر جائے تو اس کا خدا ہی حافظ ہے۔“ مرزا نے حسب عادت اتفاق نہ کرتے ہوئے جواب دیا ، ”یہ محض آپ کی خوش فہمی ہے۔ لیجئے ، میں آپ کو اولوں میں کھڑا ہو کر دکھاتا ہوں۔“ جونہی دس بارہ اولے گئی چند یا پڑے ، مرزا چکر کر زمین پر گرے اور بے ہوش ہو گئے۔
- (vii) اختلاف رکھنے کی وجہ سے مرزا باہر کھڑے ہو گئے۔ مگر جب دس بارہ اولے گئی چاند پر گرے تو وہ بے ہوش ہو گئے۔ ڈاکٹر کو بلوایا۔ پانچ گھنٹے کے بعد مرزا کو ہوش آیا تو سب حیران ہوئے کیونکہ مرزا صاحب اب نارمل انسانوں کی طرح باتیں کر رہے تھے۔ سب نے مرزا سے دریافت کیا تو مرزا ہنستے ہوئے بولے ”یہ اولوں کی کرامت ہے ، انھوں نے میرے دماغ کی ڈھیلی ڈھالی چولوں کو کچھ اس طرح کس دیا ہے کہ آئندہ میں کسی بات میں نکتہ پیدا نہیں کر سکوں گا۔“