MEHRAN

STANDARD

SCIENCE

FOR

CLASS – 6

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Preface

The series **STANDRAD SCIENCE** is a set of books according to the new syllabus of the 6th 7th And 8th class students. These science books are in particular written for young children to build up awareness about basic science in their social background.

In these book we give most activities and exercise for students to increase their knowledge about science easily.

It is important that your children start learning early. The aim is to spark the interest of the students in the science and prevent them from disliking and rejecting the science and possibly scientific professional as the result of negative experience at school and at home.

It is especially for those students who later work in field related to the sciences to have a foundation for understanding their world that allows them to make informed decisions.

This will expand their horizon and they will be interest and about thing they read, hear, or see in this 21st century and ahead.

The text is written is simple and easy language for help of students short and long questions also giving in these books. All these things will make learning cool for children.

Distribution of syllabus

There are twelve (12) chapter in standard science book for class VI. These chapters are useful for class VI students.

According to syllabus, this standard science book id divided into three terms consists of four chapter. The further details of syllabus is given as follows.

DISTRIBUTION OF SYLLABUS FOR FRIST TERM

The first term consists of four chapters. These chapter are useful for VI class students. These chapters are as under.

CHAPTER'S NO:	CHAPTRER'S NAME
CHAPTER- 1	Science and its branches
CHAPTER- 2	The study of life and its aspects
CHAPTER- 3	Human body and its aspects
CHAPTER- 4	Environment(Adaptive features of animals)

DISTRIBUTION OF SYLLABUS FOR SECOND TERM

The second term consists of four chapters. These chapter are useful for VI class students. These chapters are as under.

CHAPTER'S NO:	CHAPTRER'S NAME
CHAPTER- 5	Introduction to Chemistry
CHAPTER- 6	Chemistry of Air
CHAPTER- 7	Chemistry of Water
CHAPTER- 8	Solution and Suspension

DISTRIBUTION OF SYLLABUS FOR FINAL TERM

Final term consists of four chapters. These chapters are useful for VI class students. These chapters are as under:

CHAPTER'S NO:	CHAPTRER'S NAME
CHAPTER- 9	Introduction to Physics
CHAPTER- 10	Measurement
CHAPTER- 11	Force and Mechanics
CHAPTER- 12	Machines

Teacher's Notes

- Introduce the term science to the students. Discuss with student's different scientific concepts and branches of science. Take children to the garden and zoo and teach them plant science and animal science. Take children to science lab and introduce them scientific apparatus. Tell them safety rules of laboratory.
- Introduce the term Biology to the students. Tell them meaning and importance of Biology. Tell them history of Biology. Tell them branches of Biology such as plant Biology and animal Biology. Teach them Islamic teachings and Biology. Tell them meaning and functions of cell and parts of the cell.
- Tell the main parts of body and functions of body to the students. Tell them various system of human body. Define them need and importance of system. Bring posters, charts for students and show them organ system and various functions. Discuss importance of each sense organ. Make the children feel their bones and muscles.
- Introduce the term Environment to the students. Tell them adaptive features of animals. Make a flow chart on adaption groups of animals.
- Tell the chemistry of air to the students. Tell them definition of chemistry. Tell them historical background of chemistry. Tell them importance of chemistry. Take students to the scientific lab and tell them some important chemicals.
- Tell the chemistry of air to the students. Tell them composition of air. Tell them name of important gases which are in air. Tell them function of air. Discuss the importance of Nitrogen, Oxygen and carbon dioxide with students. Define the term atmospheric pressure. Ask them what happens if there is no air.

- Tell the chemistry of water to the students. Tell them composition of water. Tell them types of water such as soft water and hard water. Tell them water cycle. Tell them uses and importance of water. Tell them different concepts of Lavoisier and Cavendish about the chemistry of water. Ask them what happens if there is no water.
- Introduce the terms of solution and suspension to the students. Define the meaning of solution and suspension. Tell them main component of solution. Tell them various types of solution. Ask them various examples of solution of daily life. Tell them meaning of solubility and crystallization.
- Introduce the term Physics to students. Tell them definition and importance of physics. Tell them the historical background of physics. Tell them important Islamic teachings on science (Physics). Tell them uses of scientific technology in Physics. Tell them space astrology.
- Introduce the term measurement to students. Tell them meaning and uses of measurement in daily life. Tell them why we measure things. Introduce them various measuring instruments. Also tell them uses and importance of measuring instruments.
- Introduce the term force and mechanics. Tell them the meaning of force with daily life examples. Tell them importance of mechanics. Tell them types of force. Tell the, meaning of friction and advantages of friction. Ask them what is the role of force and mechanics in our daily life.
- Introduce the term machine. Define the terms, simple machine and complex machine. Tell them the purposes of machines. Tell them different types of machines. Ask them different names of machines which are used in our daily life. Also discuss them mechanical advantage and efficiency of simple machine. Define them the terms, input and output.

Chapter-1

Science and its branches

Exercise:

1 CHOOSE THE CORRECT ANSWER.

1. The world science is come from ___ word Scientia.
   A) Great B) Latin C) Sanskrit
   Ans: Latin
2. The world Scientia means _____.
   A) Ability B) knowledge C) skill
   Ans: knowledge
3. _____ is the systematic study of nature and how it affects us and environment.
   A) science B) scientific name C) classification
   Ans: Science
4. The study of life is called _____.
   A) Biology B) psychology C) sociology
   Ans: Biology
5. The study of formation and properties of matter is called.
   A) Kheem B) chemistry C) chemicology
   Ans: chemistry
6. The study of structure of the earth is called.
   A) Geology B) Thermology C) Geography
   Ans: Geology
7. _____ helps us to understand the world around us.
   A) Science B) Genetics C) Mechanics
   Ans: Science
8. The study of science is not just for _____.
   A)Electrician B) scientist C) Technician
   Ans: scientist
9. A _____ needs science to know mixing of colors and painting materials.
   A) Artist B) teaches C) scientist
   Ans: Artist

10. A photographs need to know science the nature of _____ so as to take good photograph.
A) light B) heart C) energy
Ans: Light
11. science experiments are usually performed in the _____.
A) Laboratory B) library C) green house
Ans: laboratory
12. we must follow laboratory _____ rules.
A) Daily B) common C) safety
Ans: safety.

2. SHORT ANSWER QUESTIONS

Q.1. what is science ?
Ans: The world science is derived from the Latin word "Scientia" which means knowledge. Science is the systematic study of nature and how it effects is and environment.
Q.2. write some natural phenomenon.
Ans: The following natural phenomenon give as the knowledge of science:
Colour is rainbow.
Formation of the solar system.
Motion of bodies
The dropping of an apple form tree.
Rusting of an iron
Chemical reactions
Growth of animals and plants
Q.3. Name the means branches of science?
Ans: science is divided into many branches. The main branches are given below.
Biology
Chemistry
Physics

Astronomy
Geology
Q.4. Define the terms:
Science
A person where scientists work or study science is called a laboratory.
laboratory
A place where scientists work or study science is called a laboratory.

3. LONG QUESTION QUESTIONS

Q.1. Describe the branches of science.
Main branches of science:
Ans: science is divided into many branches. The main branches are given below.
Biology: The study of life and living things.
Chemistry: The study of formation and properties of matter.
Physics: The study of matter, energy their relationship and natural forces.
Astronomy: The study of the sun the moon star and other astronomical bodies.
Q.2. Describe the safety rules. Also explain the necessity of safety rules in the laboratory.
General safety rules:
Safety rules when heating or mixing chemicals
Do not enter the laboratory without teacher's permission.
Open all doors and windows unless instructed by your teacher.
Do not carry out any test or experiment without the teacher's permission.

Read the instructions first and understand them before starting experiment. If in dough; always ask your teacher.
Handle all apparatus and chemical. Carefully and correctly.
Always check the label and the container before using the substance it contains.
Do not pour any used chemical back into its container to avoid harm.
Do not taste any chemical unless instructed by the teacher.
Do not eat, drink or play in the laboratory.
Work tidily. Wash up all used apparatus.
Place the apparatus to their proper place after cleaning.
Wash your hands after all laboratory work.

CHAPTER 2

SCIENCE AND ITS BRANCHES

EXERCISE:

1 **CHOOSE THE CORRECT ANSWER**.

1. _____ is the scientific study of living things.
   a. Biology b. pharmacology c. Virology

Ans: Biology

2. the word biology has been derived from the tow _____ words bios and logos.
   a. Arabic b. Greek c. Latin

Ans: Greek

3. The study of life is called:
   a. Bio terminology b. biology c. Histology

Ans: Biology.

4. The Greek word, bio means.
   a. life b. death c. Pain

Ans: Life

5. The Greek word logos means.
   a. study b. safety c. testy

Ans:study

6. It deals with the study of plants.
   a. Botany b. parasitology c. Morphology

Ans: botany

7. It deals with the study of animals.
   a. Zoogeography b. Zoo history c. zoology

Ans: zoology.

8. _____ is the basic unit of life.
   a. cell b. tissue c. organ

Ans: cell

9. cell was first discovered in _____.
   a.1663 b.1664 c. 1665

Ans: 1665

10. Cell was first discovered by _____.
   a. Aristotle b. Robert Hook c. Al-Farabi

Ans: Robert Hook

11.A _____ is absent in animal's cell.
   a. cell walls b. cell membrane c. Nucleus

Ans: Cell walls

12. The is _____ thin layer that Surrounds the cells.
   a. cell walls b. cell membrane c. Nucleus

Ans: cell membrane

13. Nucleus was discovered by _____.
   a. Joseph listed b. Charles brawn c. Robert brown

Ans: Robert brown

14. Nucleus was discovered in _____.
   a. 1830 b. 1831 c. 1832

Ans: 1831

15. _____are ting of the cell.
   a. organelles b. vacuoles c. cytoplasm

Ans: organelles

2. SHORT ANSWER QUESTIONS.

Q.1.what is the biology?

Ans: Biology is the Scientific study of living things. basically the word biology has been derived from the Greek words bio, means life and logos means study. Thus the study of life is known as biology.

Q.2.What is botany?

Ans: Botany:

It is a branch of biology. It deals with the scientific study of plants.

Q.3. what is zoology?

Ans: Zoology:

It is the branch of biology. It deals with the scientific study of animals.

Q.4: What is cell?

Ans: Cell:

The basic unit of life is known as cell. Just like building is made up of stones or bricks, all living organisms are made up of cells. Thus the cell is the basic structural and functional unit of life.

Q.5: Name the main parts of animal cell.

Ans: Main parts of an animal cell:

An animal cell has simple structure. An animal cell consists of three parts. Namely:

i. Cell membrane
ii. Cytoplasm.
iii. Nucleus

Q.6: What are organelles?

Ans: Organisms are tiny parts of cell. They have the same relationship to the call as organs have to the whole organism. Some of the major organelles of a cell are:

(1) Mitochondria
(2) Golgi bodies
(3) Endoplasmic reticulum

(4) Ribosomes
(5) centrosomes
(6) Plastids

Q7: Define the discovery of cell.

Ans: Discovery of cell:

A great scientist Robert Hook, who discovered cells for the first time in 1665. He was studying a thin slice of cork (a dead part of plants) under a microscope and saw box like structure which he named cells.

Q.8: What are vacuoles?

Ans: Vacuoles:

In the cytoplasm of a plant cell there are sacs like structures, known as vacuoles. The vacuoles are filled with fluid known as cell sap. The fluid consists of a huge percentage of water, sugar and some mineral salts dissolve in it.

Q.9: What is cytoplasm?

Ans: Cytoplasm:

The jelly like substance of cell is called cytoplasm.

3. LONG ANSWER QUESTIONS:

Q 1: Define the impacts of biological study in human life?

Ans: In the cytoplasm of a plant cell, there are sacs _like structures, known as vacuoles.

The vacuoles are filled with fluid known as cell sap. the fluid consists of a huge percentage, of water. sugar and some mineral salts dissolve in :

Q.2: Describe the structure of an animal cell.

Ans: Structure of an animal cell:

An animal cell has simple structure. An animal cell consists of three parts, namely:

1. Cell membrane.
2. Cytoplasm.

3. Nucleus.
4. Cell organelles.

1. Cell Membrane:

The cell membrane is a thin layer that Surrounds the cell. It separates a cell form Surroundings. it allows water, minerals and many essential substances to pass through it.

Cytoplasm:

Cells contain a jelly like substance known as cytoplasm. Many reactions also take place in the cytoplasm. There are different types of organelles, which perform different functions.

Nucleus: (Karyon)

It was discovered by Robert brown in 1831. It may be spherical in shape. In animals cells, it is usually found in the center. It is Filled with a gel like substance called nucleoplasm. It is also called controlling centre of the cell.

Organelles:

The question is arising in our mind, what are organelles? Organelles are tiny parts of cell. They have the same relationship to the cell as organs have to the whole organism. Some of the major organelles of cell are.

1. Mitochondria
2. Golgi Bodies
3. Endoplasmic Reticulum
4. Ribosomes
5. Centrosomes
6. plastids

Q.3. Describe the structure of plants cells.

Ans: structure of plants cell:

Generally plants cells are larger than animal's cells. A plants cells has cell membrane, cytoplasm and nucleus Just like an animals cell. However plant cell also has some other structures such as cell wall, chloroplast and a large vacuole. These structures are:

Cell wall:

In a plants cell there is a cell wall. The cell wall is made up of cellulose. It encloses the whole plant cell. It protects the cell. In cell wall, the cellulose is in the form of fibers. These fibers are kept in their position by a cementing materials called calcium pectate (pectin).

Chloroplast:

The chloroplast of plants cell contains tiny disk like green Organelles, known as chloroplasts. They contain Chloroplasts. They give plants their green colour. chloroplasts are necessary for the manufacture of carbohydrates (the food of a plants) by absorbing sunlight. They help in the process of photosynthesis.

Vacuole:

In the cytoplasm of a plants cell there are sac-like structures, known as vacuoles. The vacuoles are filled with the fluid known as cell sap. The fluid consists of a hung percentage of water. sugar and some mineral stats dissolve in its

Chapter :3

HUMAN BODY AND ITS SYSTEM

EXERCISE:

1. CHOOSE THE CORRECT ANSWER.

1.our _____ is much more wonderful machine than any other machine.

a. cell b. tissue c. body

Ans: body

2. Each _____ of body has a special job to do.

a. part b. Finger c. None of these

Ans: part

3. Many _____ make a system.

a. organs b. tissue c. cells

Ans: organs

4.The _____ take part in the work to be done by the system.

a. organs b. tissue c. cells

Ans: organs

5. The heart arteries and veins together form a _____ system.

a. skeletal b. circulatory c. Nervous

Ans: Circulatory

6. The human body consists of many _____.

a. system b. organizations c. ventilation

Ans: system

7. The _____ system gives form, shape and support to the body.

a. Digestive b. Muscular c. skeletal

Ans: skeletal

8. The _____ system is made up muscles.

a. Digestive b. Muscular c. skeletal

Ans: Muscular

9. There are about _____ different muscles in our body.

a. 600 b. 700 c. 800

Ans: 600

10.The _____ system helps us to breathe.

a. skeletal b. Muscular c. Respiratory

Ans: Respiratory

11. _____ always flows in the blood vessels and reaches in all Parts of the body.

a. blood b. urine c. sweat

Ans: blood

12. The _____ pumps the blood in our body.

a. lungs b. heart c. Kidney

Ans: heart

13. A human being passes out about _____ litres of urine everybody.

a. 1.5 to 2.5 b. 2 to 4 c. 3 to 6

Ans: 1.5 to 2.5

2. SHORT ANSWER QUESTIONS:

Q:1 What are organs?

Ans: Each part of body has a special job to do. All the parts of the body do their work properly. The body parts are called organs.

Q:2: What is skeleton?

Ans: Our body is supported by a general Formwork of bones called skeleton. This general formwork is also called skeletal system.

Q:3: How many bones are found in our body?

Ans: There are 206 bones in our body.

Q:4: What is muscle? Name the kinds of muscle.

Ans: The muscular system is made up of muscular. The soft fleshy portion of over body is called muscle.

Kinds of muscular:

There are two kinds of muscular in our body which are as under:

- voluntary muscles
- involuntary muscles

Q:5: how many muscles are in our body?

Ans: There are about 600 different muscles in our body.

Q:6: What is tendon?

Ans: The muscles are tacked to bones with the help of tough white material called tendon.

Q:7: What is digestion?

Ans: The process by which large molecules of food are broken down into smaller molecules in called digestion.

Q:8: What is respiration?

Ans: We breathe in and breathe in air this is called respiration.

Q:9: How many chambers are found in the heart?

Ans: There are chambers in human heart

Q:10: What are sense organs?

Ans: We are able to know about the world with the help of our eyes, ears, nose, tongue and skin. These organs are called sense organs.

3. LONG ANSWER QUESTIONS:

Q:1: what is skeletal system? Also write the kinds of bones with their names.

Ans: our body is supported by a genered frame work of bones called skeletal. This frame work is also called skeletal system. The skeletal system gives. Form, shape and support to the body. It also protects some organs inside our body.

Kinds of bones:

There are about 206 bones of different shape and size in our body which are us under.

* Long bones
* Flat bones
* Small bones
* Irregular bones

Q:2: What is the blood circulatory system? Also write and define it main organs.

Ans: Blood circulatory system:

Blood always flow in the blood vessels. And reaches in all parts of our body. Blood Supplies oxygen and food to all the parts of the body. The system which regulates the flow of blood in the body is known as blood circulatory system.

Blood circulatory organs:

Blood circulatory system consists of the following organs i.e Heart, blood vessels such as arteries, veins And capillaries.

Heart:

Heart pumps the blood in our body all the time. the human heart consists of four chambers. In a healthy adult human the heart pumps 60 to 80 time every minute.

Arteries:

The blood vessels which carry blood form the all parts of the body to the heart are called veins.

Capillaries:

These blood vessels which takes carbondioxide and all the waste form the cells and carry them to the exceetory organs are called Capillaries.

Q:3: what is excretory system? Also write its main organs.

excretory system:

The excretory system removes most of the waste material form the body. Such as urine, sweat are excreted form also the body. A man passes out 1.5 to 2.5 utters of urine everyday.

Excretory organ:

The excretory system consists of the following organs: Kidney, urinary tube and urinary bladder.

Q.4: What is nervous system? Also write its main organs.

Ans: Nervous System:

The nervous system helps us to be aware of our environment. Without it, we cannot see, hear, feel, smell and think. It controls what our body does.

Nervous Organs:

It consists of brain, spinal cord and nerves.

Q.5: Define the sense organs in detail.

Ans: Sense Organs:

We are able to know about the world with the help of our eyes, ears, nose, tongue and skin. These organs are called sense organs. The brain receives many kinds of messages through these organs.

Eyes:

Eyes help us to see things.

Ear:

Ears help us to hear sound.

Nose:

Different things have different kinds smell. Our nose helps us to smell different things.

Tongue:

Our tongue helps us to taste things that we eat.

Skin:

Our skin helps us to feel heat and cold. The skin also helps us to feel pressure and pain.

Chapter 4

ENVIRONMENT

Exercise:

(1) CHOOSE THE CORRECT ANSWER.

1. Everything around us forms our _____.

a. System b. Environment c. Surrounding

Ans: Environment

2. _____ is a scientific word for surrounding.

a. Industry b. System c. Environment

Ans: Environment

3. Air, water, temperature and light are the parts of environment.

a. Biotic b. Abiotic c. Genetic

Ans: Abiotic

4. The people in our family, our friends our pets and even bacteria are called.

a. Biotic b. Abiotic c. Taxonomic

Ans: Biotic

5. Living things, together with abiotic parts of their environment, form an _____.

a. Open system b. Close system

c. Ecosystem

Ans: Ecosystem

6. The term ecosystem was first used by _____.

a. Sir George Tensely b. Robert Brown

c. Charles Darwin

Ans: Sir George Tensely

7. Which one of the following adaptation is related to cold places?

a. Body coat of hair or wool

b. Body coat of spines

c. Waxy coat on body

Ans: Body coat of hair or wool

8. Porcupine protects itself from enemies by an adaptation called _____.

a. Spine b. Sting c. Wing

Ans: Spine

9. Chameleon protects itself from its enemies by changes in its _____.

a. Shape b. Scales c. Colours

Ans: Colours

10. All of the following adaptations are of animals living in water except _____.

a. Webber feet b. Legs c. Fins

Ans: Legs.

11. Which of the following is behavioral adaptation?
a. Burrowing b. Protective coloration
c. Waxy coat
Ans: Burrowing
12. Besides providing protection against enemies stings of some animals are also used to _____.
a. Kill the pray b. swim c. to eat the prey
Ans: Kill the prey

2. SHORT ANSWER QUESTIONS:

Q.1: Define environment and ecosystem.
Ans: Environment:
Everything around us, form our environment. Environment is a scientific word for surroundings. All things which are present around us, form an environment.
Ecosystem:
Living things, together with the non-living parts of environment form an ecosystem. Thus ecosystem may be defined as the relationship of living things with non-living in the environment. The term ecosystem was first used in 1935 by the British ecologist sir George Tensely.
Q.2: Define biotic and abiotic terms.
Biotic:
The word biotic means living parts. Animals and plants are called living parts of environment. They are also known as biotic factors of environment.
Abiotic:
The word abiotic means non-living parts. Air, water, heat and light are the non-living parts of environment. They are also known as abiotic factors of environment.
Q.3: What is adaption?
Ans: Adaption:

The features or the change in behaviour are adapted by an animal to live successfully in a particular habitat is known as adaption.
Q.4: What function does a body coat of hair or wool protects for the animal?
Ans: Some animals such as sheep have their skin covered with hair (cool). The wool acts like a cushion and provide protection to animals against injury. It also protetcs the sheep against injury. It also protects the sheeps against cold weather and keeps it warm. Animals living in cold places have thick hair or fur on their body such as polar bear, arctic fox, yak etc.
Q.5: What is the fuction of coat or spines?
Ans: In some animals like porcupine, the body is covered with spines. It helps them in defence against enemies. Adaptive features like hair (wool) and spines protect these animals cold and their enemies.
Q.6: Give one example of each of the following.
(a). Animals with body coat of scales.
Ans: Fish
(b). Animals with body coat of shells.
Ans: Tortoise.
Q.7: Write two functions of stings.
Ans: Two functions of stings:
i. Stings protect the animals by injecting toxic fluid into the body of enemies.
ii. Stings are used to kill the prey for food.
Q.8: Give two examples of animals which protect them from enemies by protection.
Ans: i. Tee frogs
ii. Chameleon

3. LONG ANSWER QUESTIONS.

Q.1: Write a note on behavioural adaptions of animals.
Ans: Behavioural adaptiion of animals:

Behavioural adaptions of animals can be diveded into three types which are under as following.

(a) Habitat of hunting at night:

Some animals protect themselves from their enemies by adapting certain behaviours, flying bat and owls usually come out at night for prey. These animals remain safe from the attack of amny animals due to darkness of night, i.e. owl, bat and cockroach come out during night to prey are protected easily from their enemies due to darkness.

(b) Burrowing habitat:

Some animals have adapted to live in the burrows. In this way they can easily protect themselves from their enemies. Rats, rabbits and many other animals live in burrow.

(c) Waxes layers on body surface:

Some insects that live desert protect themselves from loss of water from their bodies by having a waxy coat on their body. This feature preserves water in them, loust and grasshopper are the animals which have waxes layers on body surface.

Q.2: How sharp claws and teeth are helpful for some animals? Discuss.

Ans: Some animals need sharp claws and teeth for their protection against their enemies. These animals also use these features for catching and killing their prey to get food. These adaptive features are present in animals like cat, dog, lion, tiger, bear and eagles.

Q.3: Write a note on body coat of feathers. Comment.

Ans: Body coat of feathers:

Birds have a body coat of feathers. Feathers protect their bodies against injuries. These also keep the birds warm and help them to fly. Small, softy cottony fethers over the skin of chicks keep them warm and protect them from cold.

Chpter 5

INTRODUCTION TO CHEMISTRY

Execise

(1) CHOOSE THE CORRECT ANSWER.

1. _____ is the study of composition, structure and properties of matter.

a. chemicology b. chemistry

c. chemical behavious

Ans: chemistry.

2. _____ is defined as anything that exists, has mass and occupies space.

a. matter b. Attom c. molecule

Ans: Matter.

3. _____ have a fixed shape and voluume.

a. soilds b. liquied c. Gases

Ans: Solids

4. In _____ the molecule are very closely packed.

a. soilds b. liquied c. Gases

Ans: Solids

5. The _____ have definite volueme but they don't have definite shape.

a. solids b. liquied c. Gases

Ans: liquid

6. The _____ have neither definite volume nor definite shape.

a. solids b. liquids c. Gases

Ans: Gases

7. There are ____ kinds of tiny particles.

a. One b. Two c. Three

Ans: Two

8. The smallest particles are called _____.

a. Ions b. Atoms c. Molecules

Ans: Atoms

9. There are _____ fundamental particles of atom.

a. Two b. Three c. Four
Ans: Three
10. An _____ is negatively charged particle.
a. Electron b. Proton c. Neutron
Ans: Electron
11. A _____ is positively charged particle.
a. Electron b. Proton c. Neutron
Ans: Proton
12. _____ is neutral particle.
a. Electron b. Proton c. Neutron
Ans: Nuetron
13. Everything in the universe undergoes _____.
a. Change b. Reverse c. None of these
Ans: Change

(2) SHORT ANSWER QUESTIONS

Q.1: What is chemistry?
Ans: Chemistry:
Chemistry is the branch of science that deals with the study of composition, structure and properties of matter.
Q.2: What is matter?
Ans: Matter:
Matter is defined as anything that exists , has mass and occupies space. Stones, wood, building, bus, river, water, air, tree, smoke, milk, kerosine are the examples of matter.
Q.3: Name states of matter.
Ans: Satates of matter:
Matter exists in three common states. These are under as following.
(a) Solid
(b) Liquid
(c) Gas
Q.4: What is Atom?

Ans:Matter is composed of very small and things particular called atom.
Q.5: Name Fundamental particles of atom.
Fundamental partciles of atom:
There are three fundamental particles of an atom, which are under as following.
(a) Electron
(b) Proton
(c) Neutron
Q.6: Define molecules.
Molecules:
Molecules are groups of atoms joined together. For examples molecules of water, molecules of carbondixide gas etc.

(3) LONG ANSWER QUESTIONS

Q.1: What is the role of chemistry in our daily life?
Ans: Role of chemistry in our daily life:
Chemistry is playing an important role in our daily life. for example, a photograph hanging on the wall, our clothes are made of cotton or synthetic fibre, soap we use in washing etc. in simple words we can say that fuels, cement, cosmetics, detergents, soaps, paints, varnish, acids and bases, alloy s of metals, explosives, fertilizers, glass and medicnes are the major gifts of chemistry in our daily life.
Q.2: Define history of chmeistry.
Ans: Histroy of Chemistry:
The earliest periodic knowledge of chemistry was concerned with pottery making, glass making, metallurgy and dyeing. These arts and crafts were developed with considerable skills but were not understanding of the principles involved, as early as 3500. B.C in Egypt and Mesopotamia. Later the Greek,

Roman, Muslim and Modern scietists contributed a lot in the development of chemistry.

Q.3: Define solid, Liquid and Gas.

Ans: Solid:

Stones, wood, rubber, iron and salt are solids. Solids have a fixed shape and volume. In solid the molecules are closely packed. That's why they have definite shape.

Liquid:

Milk, water, cooking oil and kerosine are liquids. The liquids have definite volume but they don't have definite shape. They take the shape of vessels in which they are kept. The moleclues of liquids are apart. They are free to move.

Gas:

Oxygen, Hydrogen, Nitrogen and smoke are gases. Gases have neither definite volume nor shape. The moleculse of gases are far apart. They can move about very freely.

Q.4: Define, electron, proton and neutron.

Ans: Electron:

(i). Anelectron is negatively charged particle.

(ii). It revolves around the nucleus in the specific region, known as orbit.

Proton:

(i). A proton is positively charged particle.

(ii). It is found in the nucleus of an atom.

Neutron:

(i). It is nucleus particles.

(ii). It is also found in nucleus of an atom.

(iii). It is equal in mass to the proton.

Chapter 6

CHEMITRY OF AIR

Exercise:

(1) CHOOSE THE CORRECT ANSWER.

1. Air is _____ of the gases.

a. Element b. Mixture c. Compound

Ans: Mixture

2. Nitrogen is present in air about _____ percent.

a. 68% b. 78% c. 87%

Ans: 78%

3. Oxygen is present in air about _____ percent.

a. 21% b. 31% c. 41%

Ans: 21%

4. Carbon dioxide is present in air a about ___ precent.

a. 0.03% b. 000.03% c. 0.3%

Ans: 0.03%

5. Argon is present in air about _____ percent.

a. 0.005% b. 0.90% c. 0.05

Ans: 0.90%

6. The symbol of Nitrogen is _____.

a. N b. Ni c. Na

Ans: N

7. The formula of carbon dioxide is:

a. C_2O_2 b. CO_2 c. C_2O

Ans: CO_2

8. Oxygen is about _____ of air by volume.

a. One third b. One fourth c. One fifth

Ans: One fifth

9. It does not burn itself but substances are burnt by _.

a. Nitrogen b. Oxygen c. Argon

Ans: Oxygen

10. The pressure exerted by air is called:

a. Air pressure b. Air molecules

c. Air contraction

Ans: Air pressure

(2) SHORT ANSWER QUESTIONS

Q.1: What is air?

Ans: Air:

Air is the mixture of gases such as Nitrogen, Oxygen, Carbon dioxide and rare gases such as Argon. It contains other gases too but they are in very small quantities.

Q.2: Write the quantity of oxygen and Nitrogen by percentage in air.

Ans: (1). The quantity of oxygen is around 21% in air.

(2). The quantity of Nitrogen is 78% in air.

Q.3: Write the symbols of these gases, Nitrogen, Oxygen and Argon.

S.No.	Gases	Symbols
1.	Nitrgen	N
2.	Oxygen	O
3.	Argon	Ar

Q.4: What is air pressure?

Ans: Air Pressure:

We know that air has weight. Thus, we are under great pressure due to the weight of air. The pressure exerted by the air is known as air pressure. It is also know as atmospheric pressure.

Q.5: Is air matter? Comments.

Ans: Air is matter, like other material things because it occupies space and weight.

(3) LONG ANSWER QQUESTIONS:

Q.1: What is air? Define its composistion.

Ans: Air:

Ais is the mixture of the gases such as Nitrogen, Oxygen, Carbon dioxide and are gases such as Argon. It contains other gases too but they are in very small quantity.

Composition of Air:

The mixture of air is composed of varoius gases. Nitrogen and Oxygen take part in composition of air. The main composition of air is shwon below.

- Nitrgen = 78%
- Oxygen= 21 %
- Argon = 0.90%
- Carbon dioxide = 0.03 %
- Other gases = 0.13%

Apart from these gases air also contains water vapours and dust particles.

Q.2: Write the uses of Nitrogen.

Ans: Uses of Nitrogen:

- About 78% of the air consists of free nitrogen gas.
- Nitrogen does not burnt but it is used to prevent fire.
- The space above the oil or petrol in a tanker is filled with Nitrogen to prevent fire.
- It is used for making fertilizers.

Q.3: Write the uses of Oxygen.

Ans: Uses of Oxygen:

- Oxygen does not burn itself but substances are burnt by oxygen. This property is used to identify oxygen gas.
- Living things use oxygen for breathing. In one hour human beings consume about 1.5 to 2 litres of oxygen.
- Fish and other aquatic animals extract the oxygen dissolved in water through their gills.
- Oxygen is used in hospitals for artificial breathing.
- It is used as fuel in rockets, space and aircrafts flying at high altitude.

- Sea drives also take oxygen cylinders when they work under.
- Mountain climbers take oxygen cylinder for breathing at hight altitude.
- It has also many uses in industries.

Q.4: Write the uses of carbon dioxide.

Ans: Uses of Carbon dioxide:

- Air contaisn only 0.03% carbon dioxide. It is very essential for our survival.
- Green plants in the presence of sunlight prepare their food by using carbon dioxide and water.
- Animals get their food from plants. This means that if there is no carbon dioxide in the air, there will be no food for the animals.
- It is used in soft drinks.

Chapter 7

CHEMISTRY OF WATER

Exercise:

(1) CHOOSE THE CORRECT ANSWER

1. _____ is the most abundant substance avialable on the surface of the Earth.

a. water b. milk c. salt

Ans: water

2. The common state of water is _____.

a. solid b. liquid c. gas

Ans: liquid

3. In _____ Henry Cavendish described that water is a compound of hydrogen and oxygen.

a. 1781 b. 1781 c. 1801

Ans: 1781

4. In _____ Lavoiser described that water is consisted of two atoms of hydrogen and one atom of oxygen.

a. 1683 b. 1783 c. 1883

Ans: 1783

5. The formula of water is _____.

a. H_20 b. H_20_2 c. H_3O

Ans: H_20

6. Water is a natural _____.

a. Solute b. Solvent c. Crystal

Ans: Solvent

7. Photo mean light while synthesis means _____.

a. cancel b. to make c. to reduce

Ans: to make

8. All aquatic animals take in _____ dissolved in water .

a. oxygen b. nitrogen c. carbon dioxide

Ans: Oxygen

9. Water which produce lather with soap is known as _____.

a. lime water b. soft water c. hard water

Ans: soft water

10. Water which produces curd with soap is known as _____.

a. lime water b. soft water c. hard water

Ans: Hard water

11. The cyclic process in which evaporation and condensation occur side by side is called _____.

a. Water cycle b. oxygen cycle

c. Nitrogen cycle

Ans: Water cycle

12. Hard water contains soluble compounds of _____.

a. calcium and magnesium

b.Zinc and sulphus

c.carbon and hydrogen

Ans: Calcium and magnesium

(2) SHORT ANSWER QUESTION.

Q.1: what is water?

Ans: water

Water is the most abundant substance available on the surface of the earth. About three fourth of the earth surface is made up of water. Life on the earth is impossible without water. It is found in all three states of matter but commonly it is found in the liquid state. It is a ntural solvent.

Q.2: Write the concept of Henry Cavendish about water.

Ans: Concept of Henry Cavendish about water:

In 1781, Henry Cvendish described that water is compound of hydrogen and oxygen.

Q.3: Write the concept of Lavoiser about water.

Ans: Concept of Lavoiser about water:

In 1783, Lavoiser described that water is consisted of two atoms of hydrogen and one atom of oxygen.

Q.4: Write the four uses of water.

Ans: Four uses of water:

- Water is used for household purposes such as drinking, cooking, washing and bathing.
- It is used to egenerate electricty (hydroelectricty) in dams.
- It is used as reagent to prepare chemicals and a solvent to carry out chemicals reactions.
- It is also acts as a medium of transporting goods and passengers by boats, steamers, ship etc.

Q.5: Name the sources of water.

Ans: Sources of water:

Water is found in nature is called natural water. water obtained from rain, rivers, lakes and sea is known as natural water. Rain, well, lakes, steams, canals, rivers and sea ar the main sources of water.

Q.6: Define soft water.

Ans: Soft water:

Water is free of the soluble salts of calcium and magnesium. So ot gives lather. Washing is properly done by soft water. The chemical fromula of soft water iis H_20.

Q.7: Define hard water.

Ans: Hard water:

Hard water contains soluble compounds of calcium and magnesium. Calcium and magnesium combine with soap and form curd instead of lather. Washing cannot be done properly by hard water and a lot of soap is wasted. The chemical formula of hard water is D_20.

(3) LONG ANSWER QUESTIONS.

Q.1: What is importance of water for animals and plants?

Ans: Importance of water for animals:

- Sea animals take in oxygen for braething.
- Animals need water for drinking and bathing.
- All the aqutic animals take in oxygen dissolved in water.

Importance of water for plants:

- Water enables seeds to germinate into seedlings.
- Water is required by plants with carbon dioxide to manufacture food in the process of photosynthesis.
- Water is a habitat for aqautic plants.

- Water is essentail or we can say water is very important for the life and growth of plants.
- Water also helps in the transpporting of minerals from soil to different parts of plants.

General uses of water:

- Water is used for household purposess such as drinking, cooking, washing, celaning and bathing.
- In agriculture water is used for irrigatation. Fertilizers and pesticides dissolve in water and are absorbed by roots. Thus, they reach different parts of plants.
- Water is used to generate electricty (hydroelectrcity) in dams.
- It is used in industries to carry out variuos purposes.
- It is used as to prepare chemicals and as a solvent to carry out chemical reactions.
- It is also acts as a medium of transporting goods and passengers by boats, steamers, ships etc.

Q.2: Write the properties of soft water and hard water.

Ans: Properties of soft water:

- Soft water is free from soluble salts of calcium and magnesium.
- It is fit for drinking, cooking, washing and bathing.
- Its chemical formula is H_20.
- It is fit for plants to make their food properly.
- Is can be used in industries as soven.
- It is used for making medicines.
- It is used to generate electricty (hydrelectrcity).

Properties of Hard water:

- It contains soluble compounds of calcium and magnesium.

- The calcium and magnesium combine with soap and from curd instead od lather.
- It is not fit for drinking, cooking washing and bathing.
- Its chemical formula is D_20.

Q.3: What is water cycle?

Ans: Water cycle:

Have you ever though from where do we get water? In case water is not continuosly supplied to the water bodies, they shoud be dried up long back. It is due to the water cycle in nature that drying up is prevented. The water on the surface of the earth vaporizes and rises up in the atmosphere. There it can condense to form rain, sonw, hail storm and falls back to the earth's surface. This cyclic process in which evaporation and condesation occurs side by side is known as water cycle.

Acitvity.1: Describe the chemistry of water.

Ans: Chemistry of water:

Water is the most abundant substance available on the surafce of the earth. About three-fourth of the earth surafce is made up of water. It is found in all the three states of matter but commonly is found in the liquid state of matter. It is a natural solvent. Water is naturally colourless, tasteless and odourless. In 1781, Henry Cvendish described that water is compound of hydrogen and oxygen. In 1783, Lavoiser described that water is consisted of two atoms of hydrogen and one atom of oxygen.

In the form of water vapours, clouds water is present in the atmosphere. In the solid form it exists as snow on mountains and in polar regions. The soil

contains a large amount of water which is esential for the growth of plants. Without water all human benigs and animals would be died of thirst.

Chapter 8

SOLUTION AND SUSPENSION

Exercise:

(1) CHOOSE THE CORRECT ANSWER.

1. A _____ is a combination of substances.
   a. Element b. Mixture c. Solute
Ans: Mixture
2. A _____ is homogenous mixture.
   a. solution b. suspension c. Crystallization
Ans: Solution
3. There are _____ components of solution.
   a. Two b. Three c. Four
Ans: Two
4. The component of solution which dissolve in smaller qualntity is called _____.
   a. Solute b. Solvent c. Crystal
Ans: Solute
5. The component of solution which dissolve in larger qualntity is called _____.
   a. Solute b. Solvent c. Crystal
Ans: Solvent
6. Any solution in which water is taken as solvent is called _____ solution.
   a. Dilute b.Aqueous c. super saturated
Ans: Aqueous
7. Pure water freezes at _____.
   a. 0^o b. 10^o c. -10^o
Ans: 0^o
8. Pure water boils at _____.
   a. -10^o b. -100^o c. 100^o

Ans: 100^o
9. _____ is the process in which dissolved solute comes out the solution and form crystals.
   a. Hydration b. Hydrolysis c. Crystalliazation
Ans: Crystallization
10. The amount of solute dissolved in 100g of the solvent is called _____.
   a. solubility b. Electricity c. Hydrolysis
Ans: Solubility

(2) SHORT AANSWER QUESTIONS

Q.1: What is mixture?
Ans: Mixture:

A mixture is the combination of substances or simply it can be defined as a heterogenous combination of substances. It does not have limit. Every mixture is not a solution. There are many different types of mixture such as solution and suspension.

Q.2: What is solution?
Ans: Solution:

Solution is a mixture that contains dissolved substances. It may be solid, liquid or gas. Solution can be homogenous and hetergenoues mixture of two or more than two substances.

Q.3: Name the component of solution.
Ans: Component of solution:

There are two component of solution.

- Solute
- Solvent

Solute:

The componet of solution which dissolves in smaller quantity is known as solute.

Solvent:

The component of solution which dissolve in larger qualntity is known as solvent.

Q.4: What is suspension?

Ans: Suspension:

Suspension is defined as a heterogenous mixture consists of visible particles. For example, when powdered chalk is shaken with water, the liquid turns cloudy or turbid and after a short time while little chalk particles settle down. This cloudy liquid is known as suspension of chalk in water.

Q.5: What is solubility?

Ans: Solubility:

The amount of solute dissolved in 100 gm of the solvent is known as solubility.

Q.6: What is crystallization?

Ans: Crystallization:

Crystallization is the process in which dissolved solute comes out the solution and form crystals. Crystals are the homogenous soilds bounded by plane faces, having sharp edges, regular and definite shapes.

(3) LONG ANSWER QUESTIONS

Q.1: Define the terms.

a. Solute:

The component of solution which dissolves in smaller quantity is known as solute.

b. Solvent:

The component of solution which dissolve in larger qualntity is known as solvent.

C. Aqueous solution:

A solution of sugar in water is homogenous, which means that particles of solute (sugar) are surrounded by solvent (water) particles. Any solution in which

water is taken as solvent is known as an aqeous solution.

Q.2: What is difference between solution and suspension?

Ans: The difference between solution and suspension in given below.

Solution	Suspension
1. In solution the size of particles is between 0.1nm to 1nm.	1. In suspension the size of partciles is larger tham 1000nm.
2. In solution particles cannot be seen with the low power microscope.	2. In suspension particles can be seen by low power microscope.
3. It is homogenous.	3. It is heterogeneous.
4. It is transparent.	4. It is not transparent.
5. In solution particles do not settle down.	5. In suspensio particles settle down.
6. In solution components cannot be filtered by filtration.	6. In suspension components can be separated by filtration.

Q.3: Define saturated, unstaurated and super saturated solution.

Ans: Saturated solution:

The solution which contains maximum amount of solute in a given solvent at a specific temperature and no more solute dissolve in it is known as saturated solution.

Unstaurated Solution:

The solution in which the amount of the solute is less. It has the capacity to disslove in large quantity of solute is known as unsaturated solution.

Super saturated solution:

A super saturated solution contains greater amount of dissolved solution than that are present in a saturated solution. It is obtained by dissolving solute in a sautrated solution on heating.

Chapter 9

INTRODUCTION TO PHYSICS

Exercise:

(1) CHOOSE THE CORRECT ANSWER.

1. The word Physics is derived from the _____ word physikos means nature.
   a. Arabic b. Greek c. Latin
2. The study of matter and energy is called _____.
   a. Physics b. Physiology c. Psychology

Ans: Physics

3. The _____ first time manufactured papers.
   a. Asian b. Cinese c. European

Ans: Chinese

4. _____ used to measure the flood level in the river Nile.
   a. Egyptian b. European c. English

Ans: Egyptian

5. The history of Physics consists of _____ periods.
   a. Three b. Four c. Five

Ans: Three

6. In Biology, the microscope is used, which is invention of _____.
   a. Biology b. Chemistry c.Physics

Ans: Physics

7. _____ is the abbreviation of light amplification of light amplication by simulated emission of radiation.
   a. Laser b. Launcher c. Lubricants

Ans: Laser

8. _____ means to detect and find range of an object with radial methoid.
   a. Radar b. Radaon c. Redox

Ans: Radar

9. Satellite is a _____ object.
   a. Spherical b. Square c. Rectangular

Ans: Rectangular

10. The study of position and movement of celestial bodies is called _____.
    a. Astrology b. Palanetology c. Physics

Ans: Astrology

(2) SHORT AANSWER QUESTIONS

Q.1: What is physics?

Ans: Physics:

The words physics is derived form the Greek words physikos which means nature. It is a branch of science that deals with the study of properties of matter and energy and also relation between them.

Q.2: Define histroy of Physics.

Histroy of Physics:

The history of physcis is as old as human civilization. Even the cave men ware aware of the production of fire by rubbing two stones together. The chinese first time manufactured paper. Egyptian used to measure the food level in the river Nile. The people of the Indus valley were the pioneers of decimal system. The history of Physcis constists of three periods.

i. Initial Period
ii. Golden Period
iii. Modern Period

Q.3: What is laser?

Ans: Laser:

Laser is the abbreviation of light amplification by simulated emission of radiatoin. It is device that produces a beam of radiation with unsual properies of coherent, monochromatic and parallel.

Q.4: What is Radar?

Ans: Radar:

Radar means to detect and find range of an object with radical methods. Radar is largely used for war purposes. This device works as a guidance for aeroplanes and ships on airports and sea ports respectively. Radar is also used for the forecasting of weather, tornadoes.

Q.5: What is satellite?

Ans: Satellite:

Satellite is a spheprical object which consists of different devices. It suspends in a particluar position of space. Several satellites are revolving around the earth in their orbit. Satellite is mainly used for the communication purposes. Solar power is used in satellte.

(3) LONG ANSWER QUESTIONS.

Q.1: What is Islamic teachings on Physcis (Science)?

Ans: Islamic Taechings on Physcis (Science):

The basic priciples of science are based upon the observations of nature. The evolution of science is based upon the experiment and Islam is the only religion which emphsizes on these facts and functions through its comprehensive message.

"The Holy Quran". It is very clear from the ever revealed on the last Prophet Hazrat Muhammad (prace be upon him).

"Read with the name of Allah, the creator, who has created man from the frozen bllod, and your ultimate

lord is very merciful who taught the man with pen those things which he knew not.

(Sura-al- Alaq: Verse 1-5)

The Holy Quran stresses the man for acquiring knowledge and for provoing thoughts by the following frequently used words which arise questions in the human mind.

- Don't you see/ observe?
- Don't you thin/ ponder?
- Don't you analyse?

Q.2: Write the uses of laser.

Ans: Uses of Laser:

The uses of laser are under as following.

- It is used in jet, missile technology.
- It is used in medicines.
- It is used for operations like ulcer, tumours and bolkage of arteries.
- It is used in grinding the stones and remove stones from kidney, spleen etc.

Q.3: Describe the space astrology.

Ans: Space Astrology:

As we know that the Sun is a star. It is closest to the earth. The earth revolves around the Sun in its orbit. Eight other planest also revolve around the Sun. The astrology is the study of these bodies. It deals with that what is the position and how the movement of celestial bodies (like sun and planets) take place in the space.

Q.4: Write the importance of Physics.

Ans: Importance of Physics:

Most of these inventions are the wonders of Physics, for examples: Loud speaker in masjid, drawing water from the well. Similarly we use tape recordeer to listen Naat, songs etc. Dramas, movies and cartoon are shown on TV screen and computer are

very common for pleasure of entertainment. Aeroplane, rockets, aircraft etc, have opened the door of astrology. All these have become possible due to Physics.

Physcis also supports the other branches of science for example in Biology the microscope is used, which is invention of Phycis.
X-ray, laser, E.C.G, E.E.G, Fibre optics and number of other tools are used in diagnostic techniques of medical science.

Activity.1: What is the role of Physics in our daily life? Describe in detail.
Ans: Role of Physcis in our daily life:

Physics is playing very important role in our daily life. We use number of things in our daily life which can be made by the applications of Physcis. Some examples are given belwo.

1. In the field of Electricty:

All the electric equipments use in our home, for examples electric bulb, fan, washing mashine, refrigerator etc. They are all performed the working electricity.

2. In the field of transport:

For movement from one place to another we use the buses, cars, trains, aerolplanes etc. They all use the enegines and they are made on the basis of priciple of Physcics in thermodynamics.

3. In the field of enetertainment and medical science:

For entertainment we use the different things like radio and TV. We enjoy varous programs telecast or broadcast from TV and radio stations. In all electronic devices and appliances solid state Physics plays a vital

role. In the modern technogy laser is used in defence system, medical science and metallurgy, which work on the basis of atomic Physics. so we can see that every field of life Physcis in involved on one way or the other.

Activity.2: Write five lines abou these figures.
Ans: This figure shows satellite and space astrology.

Satellite is a spherical object which consists of different rectangular devices. It suspends in a particular position of space. Several staellites are revolving saround the earth in their orbit. Satellite is mainly used for the communcation.

As we know that the Sun is a star. It is closest to the earth. The earth revolves around the Sun in its orbit. Eight other planest also revolve around the Sun. The astrology is the study of these bodies. It deals with that what is the position and how the movement of celestial bodies (like sun and planets) take place in the space.

Chapter 10

MEASURMENT

Exercise:

(1) CHOOSE THE CORRECT ANSWER.

1. _____ is a common practice of everyday life.

a. Measurement b. Stop watch
c. Vernier caliper

Ans: Measurement

2. All measureable quantities are called _____.

a. Biological quanties b.Physical quantities

c. Chemical quantities

Ans: Physical quantities

3. A _____ is a length measuring instrument.

a. Meter ruler b. Stop watch

c. Physical balance

Ans: Meter ruler

4. A _____ is used to measure the time interval of an event.

a. Measuring cylinder b. Stop watch

c. Physical balance

Ans: Stop watch

5. The mass of an object is measured by _____.

a. Electronic balance b. Stop watch

c. Meter ruler

Ans: Electrnic balance

(2) SHORT ANSWER QUESTIONS.

Q.1: What is measurement? Give at least two examples.

Ans: Measurement:

Measurement is the common practice of everyday life. It is defined as the the combination of physical quantities with their standard units.

Example.1:

Every morning a milkman comes and gives a measured volume of milk.

Example.1:

If one goes to purchase sugar, thr shopkeeper will weigh the required amount of sugar by his common balance and will handover it to purchaser.

Q.2: Name some measuring intruments.

Ans: Measuring Instruments:

The intruments which are used to measure the physical quantities are known as measuring

instruments. Some important measuring instruments are given below.

1. Meter ruler or Meter scale 2. Meter tape
3. Vernier caliper 4. Micrometer screw guage
5. Physical balance or Electronic balance
6. Clock, wrist watch and stop watch
7. Thermometer 8. Voltmeter
9. Galvanometer 10. Ameter
11. Measuring cylinder

Q.3: What are physical quantities?

Ans: Physical quantities:

All measurable quantities are called physical quantities such as length, mass, time and temperature. Physical quantities are divided into base quantities and derived quantities.

Q.4: Name the instruments which are used for measuring volume, mass and time.

Ans: The intruments which are used for measuring volume, mass and time are as following.

Physical Quantities	Intruments
Volume	Measuring cylinder
Mass	Physical balance, Electronic balance
Time	Clock, watch and stop watch

(3) LONG ANSWER QUESTIONS.

Q.1: Define base and derived quantities.

Ans: Base Quantities:

There are seven physical quantities which form the foundation for the other physical quantities.These phyical quantities are known as the base quantities. These are length, mass, time, electric current,

temperature, intensity of light and the amount of substance.

Derived Quantities:

Those phyiscal quantities which are derived from base quabtities are known as derived quantities. These include area volume, speed, froce, work, energy, power, electric charge, electric potentail etc.

Q.2: Write a note on measuring cylinder.

Ans: Measuring Cylinder:

A measuring cylinder is a glass or transparent plastic cylinder. It has a scale along its length that indicates the voulme in millimeter (ml).

Q.3: Write a note on stopwatch.

Ans: Stop wacth:

A stop watch is used to measure the time interval of an event. There are two types of stop watch.

i. Mechanical stop watch

ii. Digital stop wacth

i. Mechanical stop watch:

A mechanical stop watch is commonly used in labortaries, can measure a time interval as small as 1/100 seconds or o.o1 seconds.

Q.3: Write a note on electronic balance.

Ans: Electronic Balance:

Electronic balances come in various ranges such as miligram, gram and kilogram.

Working:

- Before measuring the mass of a body, it is switched on.
- Its reading is set to zero.

- Next place the object to be weighed.
- The reading on the balance gives you the mass of body or any object placed over it.

Activit.1: What do you know about this figure? Discuss.

Ans: This is the figure of vernier caliper. It is an instrument used to measure the distance or length accurately upto 0.1nm.

Construction:

It consists of a grauduated centimeter bar (strip) known as main scale with a moveable scale of 10 divisions known as vernier scale. It has two sets of jaws for the measurement of internal and external diameter of cylindrical objects and a strip to get the depth of hollow cylinder.

Chapter 11

FORCE AND MACHINE

Exercise:

(1) CHOOSE THE CORRECT ANSWER.

1. _____ is used to stop a moving body.

a. Force b. Rest c. Motion

Ans: Force

2. _____ as angent which produces the motion in body.

a. Force b. Friction c. Fluid

Ans: Force

3. The S.I unit of force is _____.

a. Newton/meter b. Newton c. Newton^2

Ans: Newton

4. Force is measure by _____.
a. Force meter b. Voltmeter c. Ohm meter
Ans: Force meter
5. _____ usually measn either push or pull.
a. Fluid b. Force c. Tension
Ans: Force
6. There are ____ types of force.
a. Two b. Three c. Four
Ans: Two
7. _____ involves physical contact between objects.
a. Frictional force b. Gravitational force
c. Magnetic force
Aans: Frictional force
8. We _____ our machines by putting oil to keep them running smmoothly.
a. Heat b. Lubricate c. Charge
Ans: Lubricate
9. _____ is the force that pulls things down towards the earth.
a. Gravity b. Friction c. Magnet
Ans: Garvity
10. A book is lying on a table is the state of _____.
a. Rest b. Motion c. Gravity
Ans: Rest
11. The motion of a body in straight line is called _____ motion.
a. Translatory motion b. linear c. Both
Ans: Both
12. The rotation of the earth is _____ motion.
a. Translatory b. Rotatory c. Vibratory
Ans: Rotatory

(2) Short Answer Questions.

Q.1: What is force?
Ans: Force:

Force is an agent which produces the motion in a body or stops the motion of the body. In other words we can say that force is an agnet which changes the state of rest of a body or state of motion of a body. Force usually means either push or pull. The S.I unit of force is Newton (N). It is measured by forcemeter.

Q.2: What is friction?
Ans: Friction:

The force which opposes the motion of a body is known as friction or force of friction. Frictional force usually involves physical contact between objects, like in catching and kicking ball and stretching spring.

Q.3: What is gravity?
Ans: Gravity:

Gravity is the force that pulls things down towards the earth. Earth pulls everything due the force of gravity. It is denoted by g. The constant value of gravity is $9.8 m/s^2$ or $10 m/s^2$. It is usually non contact force.

Q.4: What is magnetic force?
Ans: Magnetic Force:

Magnets are substances that attract some other substance which are genearlly made up of irons. This is known as magnetic force.

Q.5: What is mechanics?
Ans: Mechanics:

Mechanics is the branch of Physics that deals with the kinematics and dynamics.

Q.6: Define rest and motion.

Ans: Rest:

A body is said to be in the state of rest when it does not change its position with respect to its surrounding.

Exapmle:

- A book lyaing on a table.
- A train stranding on the platform.
- A bird is sitting on a wall.

Motion:

A body is said to be in the state of motion when it changes its position with respect ti its surrounding.

Example:

- A moving train.
- A flying birds.
- A walking boy.

(3) LONG ANSWER QUESTIONS.

Q.1: Write the methods of reducing friction.

Ans: Methdos of reducing friction:

There are following methods, use to reduce or decrease friction.

- To use the lubricants (oil and gress).
- To use the balls (shperical shape bodies).
- Polish the surface properly.

(i) To use lubricants:

For decreasing the friction we can use the oils, gress, air and graphite at tha various parts of the

machines which are continously moving over one another. Also, the friction in the parts which are continously sliding can be reduced by adding the oils or some kind of powder like chaik powder. Under the high pressure we use the air as iubricant during the grinding process.

(ii) To use the balls (spherical shape bodies)

In the mechaincal process done by machiness, to reduce and minimize the sliding Friction by adding the ball baring or the rollers in the process because this friction is less than the sliding friction.

(iii) polish the surface properly:

polish the surface properly to reduce the roughness of surface.

Q:2: Describe kinematics and dynamics in detail.

Ans:kinematics:

The word Kinematics is derived form the Greek word kinemai, means motion. It is a branch of physics which deals with the motion of object without any reference of force or agent causing the motion.

Dynamics:

The word dynamics is derived from Greek word dynamics means power. It is the branch of physice which deals with the causes of motion forces affect the motion.

Q:3: Describe the types of motion.

Ans: Types of motion:

There are following types of motion.

1) Translatory motion or linear motion
2) Rotatory motion
3) Vidratory motion

1. Translatory motion:
The motion of a body in straight line or curve path is known as translatory motion. It is also known as linear motion.
Example:

1. Falling bodies.
2. Movement of a car on road.
3. The flight of an aeroplance.

2. Rotatory motion
If a body spins or ratates about a fixed point or axis, this motion of a body is known as rotatory motion.
Examples:

1. The rotation of a earth.
2. The rotation of wheel
3. The motion of electric fan.

3.Vibratory motion:
To and for motion of a body is known as vibratory motion. It is also known as oscillatory motion.
Examples:

1. To and fro motion of a swing.
2. Vibration of the wings of a brid.
3. The mation of strings of violin.

Chapter 12

MACHINES

Exercise:

(1) CHOOSE THE CORRECT ANSWER.

1. _____ is a device that helps us to do work.
   a. matter b. machine c. mechanics
Ans: Machnies
2. We use _____ to draw water from the well.
   a. Cycle b. Pullley c. Truck

Ans: Pulley
3. Machine is used to _____ the speed of force.
   a. increase b. decrease c. balance
Ans: decrease
4. Machine is used to _____ the speed of work.
   a. increase b. decrease c. balance
Ans: increase
5. There are _____ kinds of machine.
   a. Two b. Three c. Four
Ans: Two
6. The device such as a handle, a pulley or wooden plank are known as _____ machine.
   a. simple b. complex c. electronics
Ans: simple
7. _____ machines are made by combining simple machines.
   a. simple b. complex c. electronics
Ans: complex
8. _____ is a simple machine.
   a. car b. train c. pulley
Ans: Pulley
9. It is used to lift heavy objects and made up of rigid bar.
   a. Lever b. Pulley c. Inclined plane
Ans: Lever
10. In ____ kind of lever the fulcrum is located between the effort and load .
   a. first b. second c. third
Ans: first
11. Which is the example of second kind of lever?
   a. scissor b. broom c. wheel and barrow
Ans: scissor
12. Which is the example of third kind of lever?
   a. hammer b. sahvel c. see saw
Ans: hammer

13. An _____ is a plane surface, makes an angle "theta".

a. wedge b. lever c. inclined

Ans: inclined plane

14. The force is applied to a machine for doing work is called:

a. efficiency b. input c. out put

Ans: input

15. The weight lifted or resistance overcome by a machine is called _____.

a. efficiency b. input c. output

Ans: output

(2) SHORT ANSWER QUESTIONS

Q.1: What is machine?

Ans: Machines:

Machine is a device that helps us do work easily.

In other words it can be defined as: "A machine is a device on which use apply force at one place and a resistance may be observed on some other place.

Q.2: Name the types of machine.

Ans: Types of machines:

1. lever 2. Pulley 3. Screw
4. Wheel and barrow 5. Wedge 6. Inclined plane

Q.3: What is lever?

Ans: Lever:

Lever is a simple machine. It is a device, used to lift heavy objects. It is made up of a rigid bar that can turn thhe objects at a fixed point.

In words it can be defined as: " It is the simplest kind of machine consisting of rigid rod which is free to rotate about a fixed point.

Q.4: Define effort and load.

Ans: Effort:

The force applied to a machine for doing work is known as effort.

Load:

The wieght or load lifted or resistance overcome by a machine is known as load.

Q.5: Define input and out put.

Ans: Input:

The work done on a machine by the effort is known as input.

Out put:

The work done by the machine on the weight is known as output.

Q.6: What is efficiency?

Ans: Efficiency:

The ratio between the useful work done the machine (output) to the workdone on the machine (input) is known as efficiency.

Q.7: What is mechanical advantage?

Ans: Mechanical Adavantage:

The ratio between the load lifted and the effort applied is known as mechanical adavatage.

(2) LONG ANSWER QUESTIONS.

Q.1: Write the purposes of machine.

Ans: Purposes of machine:

With the help of machine we can transfer the force from one place to another place. Some main puposes of machine are under as following.

- To increase force.
- To increase speed of work.
- To change the direction of force.

Q.2: Define simple and complex machines.

Ans: Simple Machine:

The device such as handles, pulley or wooden planks are known as simple machine.

Complex machine:

Complex machines are made by comibinig two or more more simple machines. For example, washing machine, car, crane etc.

Q.3: Define the types of lever.

Ans: Types of lever:

There are three types of lever.

- First type lever
- Second type lever
- Third type lever

First type lever:

In this type of lever, fulcrum (f) exists between the load (w) and the applied effort (p).

Examples:

- Physical Balance
- See saw
- A pair of scissor

Second type lever

In this type lever, fulcrum (f) is at one end and effrt (p) is at other end, where weight (w) is in between them.

Examples:

- Door
- Nutcracker

Third type lever:

In this type of lever, fulcrum (f) is at one end and weight is at on other end, where effort (p) exists between them.

Examples:

- Huamn arm
- A pair of forceps
- Aa fire tongs.

Q.4: Define.

a. Inclined plane b. Pulley

Inclined plane:

It is a wheel with a ground outer rim which is supported with a block use to suspended form a rigid support (beam) with hook is known as pulley.

A pulley is a simple machine. It consiss of a length of rope round a wheel that is fixed to a support, such as beam. A load is attaced to one end of the rope and the other end is pulled. It is easier to pull down on the rope than to lift the weight directly upward.

SOLVED MODEL PAPER.
FOR FIRST TERM

Section: A (MCQ'S) Multiple Choice Questions

Q.1: Tick the correct answer. Marks: 10

1. The word science is come from _____ word scientia.
   a. Greek b. Latin c. Sanskrit

Ans: Latin

2. The study of structure of the earth is called _____.
   a. geology b. theology c. geography

Ans: Geology

3. _____ is the scientific study of living things.
   a. Biology b. Pharmology c. Virology

Ans: Biology

4. The greek word bios means _____.
   a. life b. death c. pain

Ans: life

5. _____ is the basic of life.
   a. cell b. tissue c. organ

Ans: cell

6. Each _____ of body has a special job to do.
   a. part b. finger c. none of obave

Ans: part

7. The _____ pumps the blood in our body.
   a. lungs b. heart c. kidney

Ans: heart

8. There are about _____ different muscels in our body.
   a. 600 b. 700 c. 800

Ans: 600

9. Everything around us form our _____.
   a.system b. environment c. surrounding

Ans: environment

10. The term ecosystem was first used by _____
    a. Sir George Tansely b. Robert Brwon
    c. Charles Darwin

Ans: Sir George Tansely

Section:B (Short Answer Questions)

Note: Attempt any six questions. Marks: 24

Q.1. Name the main branches of science.

Ans: science is divided into many branches. The main branches are given below.

Biology
Chemistry
Physics
Astronomy
Geology

Q:2: Distinguish between botany and zoology.

Ans: The difference between botany and zoology is shown in the given columns.

Botany	zoology
It is the branch of biology. It deals with the scientific study of plants.	It is the branch of biology. It deals with the scientific study of animals.

Q:3: Define the discovery of cell.

Ans: Discovery of cell:

A great scientist Robert Hook discovered cell for the frist time in 1665. He was Studying a thin slice of cork (a dead part of plants) under a mieroscope and saw box like structure which he named cells.

Q:4: what is skeleton?

Ans: our body is supported by a general frame work of bones called skeleton. This general frame work is also called skeletal system. The skeletal system gives form. Shape and support to the body. It also protects some important organs inside our body

Q.5: What is digestion?

Ans: Digestion

The process by which large molecules of food are broken down into smaller molecules in called digestion.

Q:6: What is digestion?
Ans:Tendon
The process by which large molecules of food are broken down into smaller molecules is called digestion.
Q:7:what are sense organs?
Ans: we are able to know about the world with the help of our eyes, ears, nose, tongue and skin. These organs are called sense organs. The brain receives many kinds of massage throught these organs.
Q:8: What is adaption?
Ans: Adaption:
The features or the change in behaviour are adapted by an animal to live successfully in a particular habitat is known as adaption.

SECTION: C (LONG ANSWER QUESTIONS).

Note: Apptempt any tow Question. Marks: 16

Q:1: Describe the scope of science.
scope of science:
Ans:1. Science helps us to understand the world around us, solve problems and to train our minds to think logically and systematically
2. The study of science is not just for scientists. An Artist need to know the science of mixing colour and panting material.
Photographer needs to know science to understand the nature of light so as to take good photograph.
3. we can use science to reduce the damages caused by Natural disasters such as earth quakes and hurricanes.
Q.2: Describe the structure of an animal cell.
Ans: Structure of an animal cell:
An animal cell has simple structure. An animal cell consists of three parts, namely:

1. Cell membrane.
2. Cytoplasm.
3. Nucleus.
4. Cell organelles.

1. Cell Membrane:
The cell membrane is a thin layer that Surrounds the cell. It separates a cell form Surroundings. It allows water, minerals and many essential substances to pass through it.
Cytoplasm:
Cells contain a jelly like substance known as cytoplasm. Many reactions also take place in the cytoplasm. There are different types of organelles, which perform different functions.
Nucleus: (Karyon)
It was discovered by Robert brown in 1831. It may be spherical in shape. In animal's cells, it is usually found in the center. It is filled with a gel like substance called nucleoplasm. It is also called controlling centre of the cell.
Organelles:
The question is arising in our mind, what are organelles? Organelles are tiny parts of cell. They have the some relationship to the cell as organs have to the whole organism. Some of the major organelles of cell are.

1. Mitochondria
2. Golgi Bodies
3. Endoplasmic Reticulum
4. Ribosomes
5. Centrosomes
6. plastids

Q.3: What is nervous system? Also write its main organs.
Ans: Nervous System:

The nervous system helps us to be aware of our environment. Without it, we cannot see, hear, feel, smell and think. It controls what our body does.

Nervous Organs:

It consists of brain, spinal cord and nerves.

SOLVED MODEL PAPER FOR SECOND TERM

Section:A (MCQ'S) Multiple Chioce Questions

Q.1: Tick the correct answer.

1. _____ is the study of composition, structure and properties of matter.
   a. Chemistry b. Chemistry
   c. Chemical behaviour

Ans: Chemistry

2. _____ have fixed shape and volume.
   a. solid b. liquid c. gas

Ans: solid

3. There are _____ kinds of tiny particles.
   a. one b. two c. three

Ans: Two

4. Oxygen is present in air about _____.
   a. 21% b. 31% c. 41%

Ans: 21%

5. The symbol of nitrogen is _____.
   a. N b. Ni c. Na

Ans:N

6. The common state of water is _____.
   a. solid b. liquid c. gas

Ans: Liquid

7. Water which produces lather with soap is known as _____.
   a. Lime water b. soft water c. Hard water

Ans: soft water

8. Pure water boils at _____.

   a. 0^0 b. 100^0 c. 110^o

Ans: 100^0

9. A _____ is a neutral particle.
   a. proton b. photon c. neutron

Ans: proton

10. The pressure exerted by air is called:
   a. Air pressure b.molecules c. Air contraction

Ans: Air pressure

Section. B (Short Answer Questions)

Note: Attempt any six questions. Marks: 24

Q.1: Name states of matter.

Ans: States of matter:

There are three states of matter. These are:

a. Solid b. Liquid c. gas

Q.2: Name the fundamental particles of atom.

Ans: Fundamental particles of atom:

There are three fundamental particles of atom. These are:

a. electron b. Proton c. Neutron

Q.3: Define Molecule.

Ans: Molecules:

Molecules are groups of atoms joined together. For example, molecules of water and molecules of carbon dioxide gas.

Q.4: What is air pressure?

Ans: We know that air has weight. Thus, we are under great pressure due to the weight of air. This pressure has been calculated to be 1.03kg on every square cm of our body.

The pressure exerted by the air is known as air pressure. It is also known as atmospheric pressure.

Q.5: Give the two uses of nitrogen and oxygen.

Ans: Two uses of nitrogen:

- Nitrogen gas does not burn but it is used to prevent fire.
- It is used for making fertilizer.

Two uses of oxygen:

- Oxygen is used in hospitals for artificial breathing.
- It is used as a fuel in rockets, space ships and aircrafts at high altitude.

Q.6: Write the four uses of water.

Ans: Four uses of water:

- Water is used for household purposes such as droinking, cooking, washing and bathing.
- It is used to genetate electricty (hydroelectricty) in dams.
- It is used as reagent to prepare chemicals and a solvent to carry out chemicals reactions.
- It is also acts as a medium of transporting goods and passengers by boats, staemers, ship etc.

Q.7: What is solution?

Ans: Solution:

Solution is a mixture that contains dissolved substances. It may be solid, liquid or gas. Solution are homogenous and heterogeneous mixture of two or more than substances.

Q.8: What is suspension?

Ans: Suspension:

Suspension is defined as heterogamous mixture consists of visible particles. When powdered chalk is shaken with water, the liquid turns cloudy or turbid and after a short time while little chalk particles settle down. This cloudy liquid is known as suspension of chalk and water.

SECTION. C (LONG ANSWER QUESTIONS).

Note: Attempt any two questions. Marks: 16

Q.1: Write the role of chemistry in our daily life.

Ans: Role of chemistry in our daily life:

Chemistry is playing an important role in our daily life. for example, a photograph hanging on the wall, our clothes are made of cotton or synthetic fibre, soap we use in washing etc. in simple words we can say that fuels, cement, cosmetics, detergents, soaps, paints, varnish, acids and buses, alloys of metals, explosives, fertilizers, glass and medicnes are the major gifts of chemistry in our daily life.

Q.2: What is the importance of water for animals and plants?

Ans: Importance of water for aniamals:

- Sea animals take in oxygen for braething.
- Animals need water for drinking and bathing.
- All the aqutic animals take in oxygen dissolved in water.

Importance of water for plants:

- Water enables seeds to germinate into seedlings.
- Water is required by plants with carbon dioxide to manufacture food by the process of photosynthesis.
- Water is a habitat for aqautic plants.
- Water is essentail or we can say that water is very important for the life and growth of plants.
- Water also helps in the transpporting of minerals from soil to different parts of plants.

Q.3: Write the adavantages of air.

Ans: Advantages of air:

Air is essential for life, providing oxygen for breathing and supporting fire heat and light. Benefits of fresh air include improved mental health, increased

energy, stronger immune system and stress reduction as well as digestion and supporting ecological processes like pollinnation and weather pattern .

SOLVED MODEL PAPER

For Final term

Section:A (MCQ'S) Multiple Chioce Questions

Q.1: Tick the correct answer.

1. The study of matter and energy is called _____.

a. Physics b. Physiology c. Phsycology

Ans: Physics

2. _____ is the common practice of everday life.

a. measurement b. stop watch

c. Vernier caliper

Ans: measurement

3. _____ is used to stop a moving body.

a. Force b. rest c. motion

Ans: Force

4. The SI unit of force is _____.

a. Newton.meter b. Newton c. Newton square

Ans: Newton

5. _____ is the force that pulls things down towards the earth.

a. Gravity b. Friction c. Magnet

Ans:Gravity

6. _____ is a device that hepls us to do work.

a. Matter b. Machine c. Mechanics

Ans: Machnies

7. In the _____ kind of lever the fulcru, is located between the effort and load.

a. first b. second c. Three

Ans: First

8. Which is an example of second kkind of of lever?

a. scissor b. Broom c. Wheel barrow

Ans: Scissor

SECTION. B (SHORT ANSWER QUESTIONS)

Note: Attempt any six questions. Marks: 24

Q.1: What is Physics?

Ans: Physics:

The words physics is derived form the Greek words physikos which means nature. It is a branch of science that deals with the study of properties of matter and energy and also relation between them.

Q.2: What is laser?

Ans: Laser:

Laser is the abbreviation of light amplification by simulated emission of radiation. It is a device that produces a beam of radiation with unusual properties of coherent, monochromatic and parallel.

Q.3: What is lever?

Ans: Lever:

Lever is a simple machine. It is a device, used to lift heavy objects. It is made up of a rigid bar that can turn the objects at a fixed pint.

In other words, it can be defined as, it is the simplest kind of machine consisting of rigid rod which is free to rotate about a fixed point.

Q.4: What is measurement?

Ans: Measurement:

Measurement is the common practice of everyday life. It is defined as the the combination of physical quantities with their standard units.

Example.1:

Every morning a milkman comes and gives a measured volume of milk.

Example.1:

If one goes to purchase sugar, thr shopkeeper will weigh the required amount of sugar by his common balance and will handover it to purchaser.

Q.5: What is mechanics?

Ans: Mechanics:

Mechanics is the branch of physics that deals with the kinematics and dynamics of objects.

Q.6: Name types of machines.

Ans: Types of machines:

1. lever 2. Pulley 3. Screw
4. Wheel and barrow 5. Wedge 6. Inclined plane

Q.7: What is gravity?

Ans: Gravity:

Gravity is the force that pulls things down towards the earth. Earth pulls everything due the force of gravity. It is denoted by g. The constant value of gravity is $9.8m/s^2$ or 10 m/s^2. It is usually non contact force.

Q.8: Define input and output.

Ans: Input:

The work done on a machine by effort is known as input.

Output:

The work done by the machine on the weight is known as output.

SECTION C (LONG ANSWER QUESTIONS)

Note: Attempt any two questions. Marks: 16

Q.1: Describe the space astrology.

Ans: Space Aastrology:

As we know that the Sun is a star. It is closest to the earth. The earth revolves around the Sun in its orbit. Eight other planest also revolve around the Sun. The astrology is the study of these bodies. It deals with that what is the position and how the movement of

celestial bodies (like sun and planets) take place in the space.

Q.2: Write a note on stop watch.

Ans: Stop watch:

A stop watch is used to measure the time interval of an event. There are two types of stop watch.

i. Mechanical stop watch
ii. Digital stop wacth

i. Mechanical stop watch:

A mechanical stop watch is commonly used in labortaries, can measure a time interval as small as 1/100 seconds or o.o1 seconds.

Q.3: Define simple and complex ,machnie.

Ans: Simple Machine:

The device such as handles, pulley or wooden planks are known as simple machine.

Complex machine:

Complex machines are made by comibinig two or more more simple machines. For example, washing machine, car, crane etc.