

①

(A to Z)

Chapt #1

Chapter #1

General Science

4<sup>th</sup>, 5<sup>th</sup>....

(FTS)(NTS)

{ BY: ASIF JAVED RAHIL }  
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CT, PST, DM, PET.....

- ① Classification of animals and plants is called **Taxonomy**.
- ② The process of grouping the things in groups and subgroups is called **Classification**.
- ③ In classification **Similar** things are kept in one group.
- ④ All living things are divided into **Five** main Kingdoms/groups.
- ⑤ All living things are divided into **Bacteria, Algae, Fungi, plants and Animals**.
- ⑥ In older classification bacteria were considered as **plants**.
- ⑦ Bacteria are kept in a separate Kingdom called **monera**.
- ⑧ Bacteria are very small organisms and can be seen with **microscope**.

②

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- ⑨ Algae are **green** in colour.
- ⑩ Algae are kept in a separate Kingdom called **protista**.
- ⑪ Algae are generally present in **water**.
- ⑫ Besides green colour Algae are found in **red** and **brown** colours.
- ⑬ **Fungi** is a cotton like fluffy mass appear on the stale bread.
- ⑭ The singular of fungi is **Fungus**.
- ⑮ Mushroom is a type of **Fungus**.
- ⑯ **Plants** can prepare their own food.
- ⑰ plants are the **Living** organisms.
- ⑱ Herbs, shrubs, trees and aquatic (water dwelling) are different groups of **plants**.
- ⑲ plants have **Roots, Stem, Leaves etc.**

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③

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- ②① **Animals** can not prepare their own food.
- ②② Animals are divided into **Two** large sub groups.
- ②③ organisms which have back bone in their body are called **vertebrates**.
- ②④ Invertebrates do not have **back bone** in their body.
- ②⑤ vertebrates are divided into **Five** classes.
- ②⑥ plants **can not** move from place to place.
- ②⑦ Animals **can** move from place to place.
- ②⑧ Fishes are **vertebrates** which live in water and respire by **gills**.
- ②⑨ Amphibians are **vertebrates**.
- ②⑩ **Amphibians** can live in water and on land.
- ③① **Reptiles** are completely land vertebrates.

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③① Reptiles lay **eggs** on **land**.

③② Snake is the example of **Reptiles**.

③③ Snakes lost their legs due to their **Life style**.

③④ Birds are **vertebrates**.

③⑤ The forelimbs of birds are modified into **wings**.

③⑥ The birds which can not fly are called **Running Birds**.

③⑦ **Ostrich** is the largest bird in the world.

③⑧ Ostrich is a **Running** bird.

③⑨ Ostrich/Running birds lost their ability of flight due to **having no enemies** or **having no predator**.

④⑩ Mammals are **vertebrates**.

④⑪ Those vertebrates which give birth to young ones and the mother feeds the babies with her milk are called **Mammals**.

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- 42) **Bat** is a unique mammals that can fly in air.
- 43) Human beings are also **mammals**.
- 44) Invertebrates can be classified into **Two** major groups, **insects** and **worms**.
- 45) The largest sub groups of invertebrates is **insects**.
- 46) Insects have **Three** pairs of legs.
- 47) Body of insects can be divided into **Three** parts
- 48) Head, **Thorax** and abdomen are the **Three** main parts of body of **Insects**.
- 49) Earthworm is a common **worm**.
- 50) Worms are **invertebrates**.
- 51) Earth-worms make the soil fertile and are called as **living fertilizers** or **bio fertilizers**.

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- (6)
- (52) plants can be classified into **Flowering** and **non flowering** plants.
- (53) Flowering plants produce **Flowers** for their reproduction.
- (54) Non-Flowering plants do not bear **Flowers**.
- \* (55) **Reptiles** has hard rough skin.
- \* (56) Snakes, lizards, crocodiles, tortoises, turtles all belong to the group of **Reptiles**.
- (57) **Moss** is a non-flowering plant.
- (58) Non-Flowering plants generally grow in **damp** places.
- (59) Flowering plants can be classified into **Monocots** and **Dicots** plants.
- (60) Monocots and Dicots are the subgroups of **Flowering** plants.
- (61) Monocot plants can be differentiated from Dicot plants due to **Number of cotyledons**.

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- (7)
- (62) The Flowers of Sunflower, rose, jasmine, pansy are very large and **Conspicuous**.
- (62) The Flowers of wheat and grasses are very small and **inconspicuous**.
- (63) Seeds of **Monocot** plants are made of one cotyledon.
- (64) Seeds of **Dicot** plants are made of two cotyledons.
- (65) In monocots leaf, veins are **parallel**.
- (66) In Dicots leaf, veins are in **Network**.
- (67) Leaves of **monocot** plants are narrow and pointed.
- (68) Leaves of **Dicot** plants are broad and wide.
- (69) The Flower of monocot has **Three** floral parts or multiple of these numbers.

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8 CT, PST, PET, DM - - - - -

- (70) The Flower of dicot has **Four or Five** floral parts or multiple of these numbers.
- (71) Monocots have **fibrous** roots.
- (72) Dicots have **tap** roots.
- \* (73) Ears receive sound signals and send them to our **brain**.
- (74) Teeth contain **Calcium**.
- (75) **Bacteria** grow in teeth and damage them if not properly cleaned.
- (76) Small children have milk teeth which are **Twenty** in number.
- (78) A normal Adult human being has **Thirty Two** teeth.
- (79) Sources of calcium are **Milk, Bananas, Eggs**.
- (80) **Skin** protects the internal organs from environmental effects and infections.

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(90) vital organ of the body is **Brain** which is Controls Centre of the body.

(91) To make our muscles and bones healthy we should **exercise**.

(92) **Brain** is the Control Centre of the body.

(93) Brain is the **vital** organ of the body.

(94) Movement is produced by muscles and **Bones**.

(95) Lungs absorbs **Oxygen** gas from the air.

(96) A child may get rash if he/she does not **Bathe** regularly.

(97) If we do not take healthy food, we will become **weak**.

(98) Teeth chew the food and make it easily **digestible**.

\* (99) Food Store in a seed in the form of **Cotyledon**.

(100) Science is the study of **Nature**.

\*\*\* (END OF THE CHAPTER) \*\*\*

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- (9) **CT, PST, PET, DM, -----**
- (81) Our skin provides us sense of touch.
- (82) The flesh of the body is made of **Muscles**.
- (83) Muscles are attached with **bones**.
- (84) Muscles and bones work together to produce **Movements**.
- (85) **Bones** help to protect our vital organs like heart, liver, brain, lungs etc.
- (86) Heart is a muscular pump which is located on the **Left** side of the chest cavity.
- (87) **Heart** pumps blood to different parts of the body.
- (88) The food we chew passes down into a sac like structure called **Stomach**.
- (89) Lungs are important because they **Release Carbon Dioxide** and **Absorb oxygen**.

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(A to Z) <sup>①</sup> General Science

chap# 2

Level 4<sup>th</sup>, 5<sup>th</sup>

FTS, NTS, ETEA

CT, PST, PET, DM-----

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Related to chap#2 class 4<sup>th</sup>

- ① Living things like animals and plants requires **Food, Air, water and sunlight** to survive.
- ② Air contains gases like **Nitrogen, oxygen and carbon dioxide**.
- ③ Animals and plants take **oxygen** from the air to breathe.
- ④ plants absorb **carbon dioxide** from the air during **day** time to prepare their food.
- ⑤ Animals and plants ~~body~~ bodies consist of **70%** of water.
- ⑥ plants prepare their food in the presence of **Sunlight**.

(2)

CT, PST, PET, DM - - - - -

- (7) The stored food in plants is utilized by **Animals**.
- (8) In Quran Allah says "And we give life to every thing from **water**."
- (9) The movement of animals and human beings from place to place is called **Locomotion**.
- (10) Touch-me-not (choi-moi) plant shows rapid movements of leave when **touched**.
- (11) A seed is transformed into a plant by the process of **Growth**.
- (12) Some animals lay eggs while some produce **Babies**
- (13) Most of the plants produce seeds which grow into young plants called **Seedlings**.
- (14) Similar characters are transferred by the parents to their young ones, this property is called **Heredity**.

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(3)

CT, PST, PET, DM, - - - - -

(15) The kittens look like a cat and a puppy looks like a Dog.

(16) A Human baby is similar to a human, this property is called **Heredity**.

(17) The differences among young ones of the same parents are called **Variation**.

(18) The fish-like animals swimming in standing water are **tadpoles (young frogs)**.

(19) Animals and plants pass through a series of developmental stages ~~with~~ which make up their **life cycle**.

(20) Larva is transformed into pupa.

(21) pupa is transformed into **Adult**.

(22) Different stages of life cycle of many insects are **egg, Larva, pupa, Adult insect**.

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## Related to Chap#2 class 5<sup>th</sup>:

- (23) Microscope was invented by Dutch Scientist, Antony Van Leeuwenhoek in 1667.
- (24) Microorganism can only be seen with an equipment called microscope.
- (25) Virus, Bacteria and Fungi are examples of microorganisms.
- (26) Viruses can only be seen with electron microscope.
- (27) Viruses live inside a living cell.
- (28) Outside of living cell viruses make crystals.
- (29) Viruses may be spherical, rod shaped or tadpole shaped.
- (30) Influenza, measles, chicken-pox, polio, hepatitis and AIDS are the diseases caused by viruses.
- (31) The word virus is derived from Latin word "Venom" which means poisonous fluid.

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5) CT, PST, PET, DM, -----

- 32) The natural ability of the body to resist diseases is called immunity.
- 33) Microscope was invented in 1667.
- 34) The first virus was identified by W. Stanley.
- 35) Virus was discovered in 1935.
- 36) The first virus identified by W. Stanley was Tobacco Mosaic Virus.
- 37) Bacteria are the most abundant living organisms in the world.
- 38) There is no nucleus in Bacteria.
- 39) Bacteria are present in water, air, soil, food, hot springs, frozen lakes and glaciers.
- 40) Bacteria are present inside the bodies of animals and plants.
- 41) Bacteria convert milk into yogurt.
- 42) Bacteria convert sugar syrup into alcohol.
- 43) Some Bacteria help in baking.

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CT, PST, PET, DM, -----

④④ Bacteria help in making pickle. (101)

④⑤ Bacteria Convert milk into curd. (102)

④⑥ Some Bacteria are useful whereas some are harmful.

④⑦ Bacteria The soil fertile.

④⑧ Bacteria are the main decomposers in the ecosystem.

④⑨ Bacteria cause tuberculosis (TB), pneumonia, cholera, typhoid, dysentery in human beings.

⑤⑩ Bacteria cause diseases in plants like blight, citrus canker, crown gall.

⑤⑪ To control bacterial diseases special medicines are used which are called antibiotic.

⑤⑫ First antibiotic was extracted from a fungus called penicillium.

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- (53) **Bacteria** are the main decomposers in the ecosystem.
- (54) **Fungi** is a diverse group of organisms.
- (55) **Mushroom** is a type of **Fungi**.
- (56) **Fungi** take their food by decomposing the material.
- (57) **Fungi** play an important role in recycling.
- (58) **Yeast** is a microscopic **Fungus**.
- (59) The microorganism used in baking industry is **yeast**.
- (60) **Yeast** raises dough in flour.
- (61) Rust and Smut are disease of plants caused by **Fungi**.
- (62) Ringworm and athlete's foot are the common diseases/infections caused by **Fungi**.

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CT, PST, PET, DM, -----

\* (63) First antibiotic Penicillin was extracted from a fungi called Penicillium.

(64) Rusts are commonly **black** in colour and smuts are **yellow**.

(65) The condition in which a disease causing microorganism enters the body of an organism and start growing there is called **Infection**.

(66) Crystals of viruses and spores (seeds) of bacteria and fungi are present in **air, water, soil**.

(67) To increase the immunity of the body **vaccination** is done.

or (68) **Vaccination** is done to increase the **immunity** of the body:

(69) The power of the body to control germs is called **immunity**.

or (70) The natural ability of the body to resist diseases is called **immunity**.

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CT, PST, PET, DM, - - - - -

- (71) Infections caused by microorganisms can be avoided by keeping ourselves **clean**.
- (72) Some fungi are beneficial but many are **harmful**.
- (73) Hapatitis and polio is caused by **virus**.

END of the chap#2

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(A to Z) "General Science" Chap # 3

3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>

FTS, NTS, ETEA

CT, PST, PET, DM, .....

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Related to chap #1 class 3<sup>rd</sup>:-

- ① Earth is the only planet where life exists.
- ② Earth is also called the "Life planet".
- ③ Life on earth is because of Sun.
- ④ The heat and light of the sun help to prepare food of living things.
- ⑤ All living things need heat and light of the sun to live and grow.
- ⑥ Temperature is the measurement of heat and cold.
- ⑦ Temperature can be measure with a **Thermometer**.
- ⑧ Temperature, light and water are called **Enviromental Factors**.
- ⑨ **Habitat** is a place where a living thing can live.

- (10) Home of plants and animals is called **Habitat**.
- (11) There are **Two** main habitat, **Land habitat** and **water habitat**.
- (12) Land Habitats are **Forest, Desert** and **Grassland**.
- (13) water Habitats are **River, pond, Ocean/sea, polar Regions**.
- (14) **Camel** is known as **Ship of the desert**.
- (15) **Indus River** is the largest river of **Pakistan**.
- (16) **Oceans and Seas** are **Salty water habitats**.
- (17) **Jelly fish** is the oldest living thing on the earth.
- (18) The ~~is~~ biggest animal found on earth is **Whale**.
- (19) Life is very **Rare** on **polar Regions**.

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③ CT, PST, PET, DM, -----

- ②0 our earth has two poles North pole and South pole.
- ②1 Camel can store food in its hump.
- ②2 Camel can close nostrils to save itself from sand.
- ②3 Boat like body, fins and tail fin help the fishes in swimming.
- ②4 Fishes breathe in water through its gills.
- ②5 Cactus is found in deserts.  
↳ (a plant in desert)
- ②6 Lotus is found in ponds/water.  
↳ (a plant in water)
- ②7 In pine trees seeds are safe in cones.
- ②8 Pine trees have needle like leaves.
- ②9 broad feet help the camel in a desert habitat.
- ③0 The young ones of animals are similar to their parents.

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④ **CT, PST, PET, DM, - - - - -**

Related to Chap #3 class 4<sup>th</sup>:-

③① Carbohydrates (Sugars) provide instant energy to our body to perform ~~work~~ work.

③② potato, wheat rice, corn and all types of sweet fruit contain Carbohydrates.

③③ Meat, Chicken, egg, pulses, milk contain proteins.

③④ proteins help in growth and healing of wounds.

③⑤ proteins are building blocks of our body.

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③⑥ our flesh, our nails, hair etc are made up of proteins.

③⑦ Glucose is a form of Carbohydrates.

③⑧ As compared to carbohydrates and proteins **Fats** provide more energy.

③⑨ Oil, ghee, peanuts, other nuts, yolk of egg, milk, butter, cream all contain Fats.

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⑥

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⑤① A diet containing food items from all food groups in proper amount is called **Balanced Diet**.

⑤② A diet missing any of the food groups is called a/an **unbalanced Diet**.

⑤③ A **food pyramid** shows different food groups in terms of their amount in our diet.

⑤④ Hygiene means to keep ourselves **clean**.

⑤⑤ Healing of wounds is helped by **protiens**.

⑤⑥ **Fats**, is represented at the top most portion of the food pyramid.

⑤⑦ Fats are present in **YOLK** of egg.

⑤⑧ Flesh of our body is made up of **protiens**.

⑤⑨ To keep healthy we need **balanced** diet.

⑤⑩ potato is a rich source of **carbohydrates**.

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⑦

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Related to chap # 3 class 5<sup>th</sup> :-

- ⑤0 Seeds are of **two** types.
- ⑤1 The pieces of seeds are called **cotyledons**.
- ⑤2 The seeds which have one cotyledon are called **Monocotyledonous** seeds.
- ⑤3 The seeds which have two cotyledons are called **Dicotyledonous** seeds.
- ⑤4 wheat, rice, maize, barley are **Monocotyledonous** seeds.
- ⑤5 A seed has a hard outer coat called **Testa**.
- ⑤6 A grain of maize contain **one** cotyledon.
- ⑤7 In grain of maize yellow coloured embryo can be seen surrounded by food material called **endosperm**.
- ⑤8 French bean, gram, pea, mango are the examples of **Dicotyledonous** seeds.
- ⑤9 Baby plants inside the seed is called **embryo**.

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- (60) The posterior part of the embryo is called **Radical**.
- (61) Radical of the embryo grows into **Roots**.
- (62) The interior part of the embryo is called **plumule**.
- (63) plumule of the embryo grows into **stem and leaves**.
- (64) Cotyledons are important because they **store food**.
- (65) The process in which seeds grow into new plant is called **Germination**.
- (66) A seed kept at low temperature does not grow because of not getting **proper Temperature**.
- (67) There are **Two** types of Germination.
- (68) **Hypogeal Germination and Epigeal Germination** are the types of Germination.
- { Hypogeal → Hypo = below, geo = earth  
Epigeal → epi = above, geo = earth
- (69) In Hypogeal Germination Cotyledons remains **below** the soil.

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(9)

CT, PST, PET, DM, - - - - -

- (70) In Epigeal Germination The cotyledons come above the soil.
- (71) Seeds need Four conditions to grow well.
- (72) Seeds require water, air, light and proper temperature for Germination.
- (73) The cutting of rose and Jasmine growing into new plants, this type of Germination is called vegetative growth.
- (74) Monocot seed of wheat and maize show **Hypogeal** Germination.
- (75) we eat different seeds because they have **stored** food.
- (76) During germination the first part arises from the seed is **Radical**.
- (77) Bean seed, Caster oil seed and pea seed are the examples of **Epigeal** germination.



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(a to z) ① "General Science"

Chapter # 4

FTS, NTS, ETEA

3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>

CT, PST, PET, DM, ----- By:- ASIF JAVED RAHI  
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Related to chap # 3 class 3<sup>rd</sup>:-

- ① Earth revolves around The **Sun**.
- ② All seasons occur due to the revolution of the earth around the **Sun**.
- ③ A course along which someone or something moves is called **direction**.
- ④ There are **Four** important directions.
- ⑤ The four important directions are **East, west, North and South**.
- ⑥ A dark image formed by a body that blocks rays of light is called **Shadow**.
- ⑦ In morning time the shadow will be towards **West** and **longer** than the body.
- ⑧ In the noon the shadow will be **under** the ~~feet~~ **feet** and much **smaller** than the body.

(2) CT, PST, PET, DM, .....

- (9) In Evening The shadow will be towards The **East** and **longer** than The body.
- (10) The Sun gives us the light and **heat**.
- (11) The opposite direction of North is **South**.
- (12) In a map, the upper part will be in the **North** direction.
- (13) The Sun is a bright **star**.

Related to chap #4 class 3rd:-

- (14) Allah has gifted our earth with many **resources**.
- (15) There are **Three** kinds of resources.
- (16) Three kinds of resources are **natural resources**, **Human resources** and **Capital resources**.
- (17) Resources found in nature are called **natural resources**.
- (18) plants, animals, water, air, land, forests and soil are examples of **natural resources**.

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③ CTs, PST, PET, DM, -----

⑱ The people who are useful to the Society are called **Human Resources**.

⑳ Doctor, Teacher, Engineer, Mason, painter, Driver are examples of **Human resources**.

㉑ Tools, machines and factories are called **capital resources**.

㉒ Vehicles, Factory, Ship, Aeroplane, Motorway, poultry farm are the examples of **Capital resources**.

㉓ The things we buy and sell are called **Goods**.

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㉔ Goods come from **natural and capital resources**.

㉕ To do something useful is a **Service**.

㉖ Teaching and nursing are examples of **Services**.

㉗ A person who buys a thing is a **buyer**.

㉘ A person who sells a thing is a **Seller**.

㉙ The dependence of people on each other for various goods and services is called **Interdependence**.

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4

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Related to chap # 5 class 3rd :-

30

30) The natural world that surrounds a living thing is called its **environment**.

31

31) Each year April **22** is celebrated as Earth Day.

32

32) **Human activities** changes the natural environment.

33

33) **Conservation** of natural ~~resources~~ resources means to protect or save natural resources by using it wisely.

34

34) Natural Resources can be saved by:-

(i) **Recycling** the used resources.

(ii) **Re-using** of the used materials.

(iii) **Reducing** misuse of natural resources.

35

35) Those animals which are left very few in number are called **Endangered** animals.

Examples:- Markhor, Snow leopard, Indus Dolphin, flying squirrel, chakor, Ibex. etc.

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(5)

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(36) 17<sup>th</sup> May is the Day of endangered animals.

(37) Markhor is the national animal of Pakistan.

(38) Chakor is the national bird of Pakistan.

(39) The animals that lived on earth but are no more there, are called **Extinct** animals.

Examples :- Dinosaurs, Dodo bird, Golden toad.

Related to chap #4 class 4<sup>th</sup> :-

(40) All types of environment have two main components.

(41) The two main components of environment are **Living components** and **non-living components**.

(42) Air, water, soil, light etc are the **Non-living** components of environment.

(43) Animals, plants, Bacteria, Fungi etc are the **Living** components of environment.

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6

## CT, PST, PET, DM, - - - - -

(44) Land, water, Air are different types of environment.

(45) Land environment includes Mountains, Deserts, Forests, Grasslands.

(46) In land environment animals have thick skin.

(47) Whales and Dolphins are not fishes, they are mammals.

(48) Whales and Dolphins give birth to their babies.

(49) Whales and Dolphins come above water to Respire.

(50) There are ~~three~~ three types of animals.

(51) Herbivores, Carnivores, Omnivores are three types of Animals.

(52) Animals which eat only plants are called Herbivores.

(53) Animals which eat flesh of the other animals are called Carnivores.

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M<sup>sc</sup> Physics, CT, BEd.

## ⑦ CT, PST, PET, DM,-----

- ⑤④ Animals which eat both types of food (plants and flesh of animals) are called **Omnivores**.
- ⑤⑤ cow, goat, donkey, horse are the examples of **Herbivores**
- ⑤⑥ Dog, Lion, etc are the examples of **Carnivores**.
- ⑤⑦ Hen, crow etc are the examples of **Omnivores**.
- ⑤⑧ Human beings are **Omnivores**.
- ⑤⑨ **Plants** are the only organisms in this world which produce their own food.
- ⑥① plants are called **producers** because they produce their own food.
- ⑥① Animals eat plants (producers) and therefore called **Consumers**.
- ⑥② Bacteria and fungi are called **Decomposers**.
- ⑥② The relationship of eating and being eaten is called **food chain**.

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MPhil physics, CT, BEd.

(8) CT, PST, PET, DM, -----

- (63) plants are producers while animals are **Consumers**.
- (64) Desert is an example of **land** environment. All Competitive Exam Preparation  
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- (65) Our surrounding is called our **environment**
- (66) Birds have **hollow** bones which are help-ful in flying.
- (67) Boat - shaped body of fish helps them in **movement**.
- (68) Fungi are an example of **decomposers**.
- (69) crow is a **omnivore**.
- (70) In which environment animals have thick skin? **Land environment**.
- (71) Tiger, Lion, dog, cat, whale and dolphin are **Carnivores**.
- (72) In fishes fins are the organs of **locomotion**.

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MPC/ physics, CT, BED.

(9) CT, PST, PET, DM, -----

Related to chap # 5 class 4<sup>th</sup> :-

- (73) Any thing which occupies space and has mass is called **Matter**.
- (74) Matter is found in **Three** states.
- (75) Solid, liquid and gas are the **Three** states of **Matter**.
- (76) Solid objects are hard and have **fixed** volume and shape.
- (77) Chair, book, pen, ruler, stone, iron, tree are the examples of **Solids**.
- (78) Liquids do not have **fixed** shape.
- (79) Liquids have **fixed** volume.
- (80) Liquids can **flow**.
- (81) water, honey, tea are the examples of **Liquids**.
- (82) Gases have no **fixed** shape and volume.
- (83) Most of the gases are **colourless** and **odourless**.
- (84) we can not see the **Gases** (mostly).

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(10)

CT, PST, PET, DM, -----

- (85) Air, Steam, oxygen gas, natural gas, Carbon dioxide gas, hydrogen gas are the examples of **Gases**.
- (86) **Matter** can be changed from one form to another by heating.
- (87) The Solids which dissolve in Liquids are called **Soluble Solids**.
- (88) The Solids which do not dissolve in liquid are called **Insoluble Solids**.
- (89) when Insoluble Solids are mixed with water or with each other they form a **mixture**.
- (90) There are **Two** simple methods of separation of components of a mixture.
- (91) **Decantation and Filtration** are two simple methods of separation of components of a mixture.
- (90) **Decantation** is a method used for separation of insoluble Solids from the mixture.
- (91) **Filtration** a process of separating an insoluble solid from a liquid by passing it through a filter paper.

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mpeel physics, CT, BED.

(16) CT, PST, PET, DM, - - - -

- (92) Water filters are made on the principle of **Filtration**.
- (93) The three states of matter can be converted into each other.
- (94) The soluble solids/materials get dissolved in water and make **Solutions**.
- (95) The substance which has no fixed shape and fixed volume is called **Gas**.

### Related to chap 4 class 5<sup>th</sup>:-

- (96) A Harmful change in environment is called **pollution**.
- (97) The things which cause pollution are called **pollutants**.
- (98) Water, air and land make **environment**.
- (99) There are **Three** main kinds of pollution. (**Water pollution, Air pollution, Land pollution**)
- (100) Contamination of lakes, oceans and ground-water is called **water pollution**.

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(12)

CT, PST, PET, DM, -----

- (101) When the amount of carbon dioxide increases in the air and oxygen decreases then this state of matter is called **Air pollution.**
- (102) Gases like Sulphur Dioxide and Nitrogen Dioxide dissolved in rainwater to produce **acid rain.**
- (103) The pollution of the earth by solid and liquid wastes is known as **Land pollution.**
- (104) **Harmful** gases pollute the air.
- (105) **Ozone** prevents earth from most of the sun's harmful rays.
- (106) **Ozone** is the upper layer of the atmosphere.
- (107) Cars and buses give off large amount of **harmful gases.**
- (108) Pollution is mainly caused by **people.**
- (109) The main cause of air pollution is **burning of fuels.**

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13

CT, PST, PET, DM, -----

110 We need clean air for **breathing**.

111 Planting trees is the best way to reduce **Air pollution**. All Competitive Exam Preparation  
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112 Dysentery, typhoid, Cholera, hepatitis and skin diseases cause by **polluted water**.

113 Asthma, skin and eye allergies, headache, ENT problems and lungs diseases cause by **polluted Air**.

114 Biodegradable materials are those which are degraded by **nature**.

115 Dead plants and animals are **biodegradable**.

116 Non-biodegradable materials are those which can not be degraded by **Natural methods**.

117 **Non-biodegradable Things** always pollute our environment.

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(a to z) ① "General Science" chapter # 5

FTS, NTS, ETEA

3rd, 4th, 5th

CT, PST, DM, PET-----

By:- ASIF JAVED RAHİ  
MPhil physics, CT, BED  
PST GPS Kotka M. Alikhan

Related to Chap # 6 class 3rd:-

- ① Food is a basic need of **living things**.
- ② On the basis of food, animals can be divided into **Three groups**.
- ③ Herbivores ~~eat~~ animals eat **plants**.
- ④ Herbivores ~~to~~ animals have **broad and flat teeth**.
- ⑤ Carnivores animals eat <sup>گشت</sup> **Flesh of other animals**.
- ⑥ Teeth of carnivores are **long, sharp and pointed**.
- ⑦ Omnivores animals eat **both meat and plants** (مردی).
- ⑧ Cow, deer (بکری), rabbit, elephant, grasshopper are examples of **Herbivores** animals.
- ⑨ Tiger, falcon, fox, polar bear, cat are examples of **Carnivores** animals.

(4)

CT, PST, PET, DM, -----

- (27) Edison built his first lab at the age of **10**.
- (28) Edison lost his hearing at the age of **12**.
- (29) Ibn-e-Sina, Al-masudi and Ibn-al-Haytham are **Muslim** ~~scientist~~ inventors.
- (30) ~~It~~ Rose Essence was invented by **Ibn-e-Sina**.
- (31) windmill was invented by **Al-masudi**.
- (32) pinhole camera and Dibber was invented by **Ibn-al-Haytham**.
- (33) Modern digital computer was invented by **J.V Atanosoff**.
- (34) Fax Machine was invented by **A. Bain** in **1843**.
- (35) Microwave was invented by **P. Spencer**.

Related to chapter #9, class 3rd:-

- (36) In old times people used **Tools** to make their work easy.

By:- ASIF JAVED RAHIZ **mpsc, physics, CT, BEd.**

### ③ CT, PST, PET, DM, - - - - -

- ①7 A Thing That is invented/made by The inventor is called **invention**.
- ①8 Something seen or learned for The first time is called **discovery**.
- ①9 Light bulb was invented by **Thomas Edison**.
- ②0 X-ray machine was invented by **Prof: Wilhelm Roentgen**.
- ②1 Computer was invented by ~~and~~ **Charles Babbage**.
- ②2 Camera was invented by **Ibn-Al-Haytham**.
- ②3 At first time, Aeroplane was invented by **wright Brothers**.
- ②4 Telephone was invented by **Alexander Graham Bell**
- ②5 Internet was invented by **Tim Berners Lee**.
- ②6 Television was invented by **John Logie Baird**.

By:- **ASIF JAVED RAHI**  
**MSc physics, CT, BEd.**

②

CT, PST, PET, DM, -----

- ⑩ Chimpanzee, Mouse, turtle, Bears, ostrich, Crow are examples of **Omnivores** animals.
- ⑪ Basic food groups are **Fruits, vegetables, Seeds/Grains, Dairy Food, Meat, Dry Fruit.**
- ⑫ A diet which has a right amounts of all food items is called **Balanced** diet.
- ⑬ A **balanced** diet meets all the needs of our body and keeps us healthy.
- ⑭ Cleanliness, proper sleep and exercise are the basic factors of **healthy** living.
- ⑮ Food gives us **energy.**

Related to chap# 8 class 3<sup>rd</sup>:-

- ⑯ A person who invents/makes a thing for the first time is called an **inventor.**

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⑤ CT, PST, PET, DM, -----

③⑦ Long long ago men used **Stone** tools for hunting.

③⑧ A **Tool** is a device that can be held in the hand to carry out a particular function.

③⑨ **Lever** is used to lift heavy loads.

④⑩ **Rope and pulley** is used to draw water from the well.

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④⑪ **Force** is used to push or pull an object.

④⑫ When we move something to bring it closer, it is called a "**pull**".

④⑬ When we move something away from ourselves, it is called a "**push**".

④⑭ A device which makes our work easier is called a "**Machine**".

④⑮ A Thing can only move when a **Force** is applied on it.

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⑥ CT, PST, PET, DM, - - - - -

④6 A woodcutter uses his **axe** to cut woods.

④7 Lever is a **Simple** machine.

④8 A sweeper sweeps with help of a **broom**.

④9 An act to oppose the will/idea of another or others is called a **Conflict**.

⑤0 A **Conflicts** is not a positive and healthy attitude.

⑤1 when conflicts are at local community **Community leaders** play an important role to resolve it.

The



END

Congrats

Class 3rd Science Completed.



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⑦ CT, PST, PET, DM, -----

Related to chap # 6 class 4<sup>th</sup> :-

① **Heat** is a form of energy which flows from hot objects to cold objects due to difference in temperature.

or ⑤③ Heat is a form of **energy**.

⑤④ The degree of hotness or coldness of a body is known as **Temperature**.

⑤⑤ Our sense of touch does not give us the **exact measurement** of temperature.

⑤⑥ **Thermometer** is a device used for the measurement of Temperature.

⑤⑦ The glass tube of thermometer is filled with **mercury or alcohol**.

⑤⑧ A thermometer measures temperature in **degrees**.

⑤⑨ A doctor measures our Temperature with a **Thermometer**.

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MPEL physics, CT, BED.



## ⑧ CT, PST, PET, DM, -----

- ⑥0 There are **Two** Common Scales of temperature.
- ⑥1 Centigrade scale / Celsius scale ( $^{\circ}\text{C}$ ) and Fahrenheit Scale ( $^{\circ}\text{F}$ )
- ⑥2 Freezing point of water in Celsius scale is  **$0^{\circ}\text{C}$** .
- ⑥3 Freezing point of water in Fahrenheit Scale is  **$32^{\circ}\text{F}$**
- ⑥4 Boiling point of water in Celsius scale is  **$100^{\circ}\text{C}$**
- ⑥5 Boiling point of water in Fahrenheit is  **$212^{\circ}\text{F}$** .
- ⑥9 Doctors use clinical Thermometer, while in Laboratories we use ~~Laboratory~~ **Laboratory** Thermometer.
- ⑥5 A Small Thermometer used to measure human body temperature is called a **clinical Thermometer**.
- ⑥6 The average temperature of a healthy person is  **$98.6^{\circ}\text{F}$  or  $37^{\circ}\text{C}$** .

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⑨ CT, PST, PET, DM, -----

⑥7 In laboratories we use the **Centigrade** Thermometer.

⑥8 Laboratory Thermometer is marked from  **$-10^{\circ}\text{C}$  to  $110^{\circ}\text{C}$** .

⑥9 Mercury is **poisonous**.

### Related to chap # 7, class 4<sup>th</sup> :-

⑦0 Force is a **push or pull** exerted by one thing on another.

⑦1 A **Force** can change the shape and size of an object.

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⑦2 A **Force** can change the speed of a moving object or the direction in which a body is moving.

⑦3 The larger the force the greater the **distance travelled**.

⑦4 The distance covered by a body in a unit time is called **Speed**.

By:- ASIF JAVED RAHI <sup>MA</sup> physics, CT, BED.

10) **CT, PST, PET, DM, -----**

75) If we divide The distance Covered by The time we will get **speed**.

76) Any Thing that helps to make a work easier is called a **machine**.

77) jack and rod, pully, Scissors, screw drivers, etc are **Simple machines**.

78) Cutter, stapler, Nut Cracker, Hammer, Broom stick, plier, wheelbarrow, pully are **Simple machines**.

79) A Scissor is a **Simple machine**.

80) Lifting a box is **pulling**.

81) Screw driver and Scissors are called **Simple machines**.

82) Speed of a car can be changed by **applying force**.

83) **Stapler** is an example of Simple machine.

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MSc in physics, CT, BED.

(11) CT, PST, PET, DM, -----

(84) A force can stop a **moving** body.

Related to chap #5, class 5<sup>th</sup> :-

(85) Any thing that occupies space (volume) and has mass is called **Matter**.

(86) Matter exists in ~~two~~ **three** states.

(87) Solids, Liquid and gas are **three** states of **Matter**.

(88) A solid has a **fixed** shape and volume.

(89) In solid, molecules are **closely** packed together. ~~with gaps~~

(90) wood, iron, gold are examples of **Solids**.

(91) A liquid has definite volume but it does not have **fixed shape**.

(92) water, milk, oil, juice, honey, petrol are examples of **Liquid**.

By:- **ASIF JAVED RAHİ**  
M<sup>o</sup>B<sup>e</sup>L physics, CT, BED.

(12)

CT, PST, PET, DM, -----

- (93) A gas has no definite **shape and volume.**
- (94) The force of attraction in solids is **Strong.**
- (95) The force of attraction in liquids is relatively **weaker** ~~than~~ as compared to solid.
- (96) The ~~forces~~ force of attraction in gases is very **weak.**
- (97) Solids **expand** on heating
- (98) At boiling point the liquids convert into **Vapours or Steam.**
- (99) The change of state from solid to liquid when heat is added to materials is called **Melting process.**
- (100) Different materials melt at **different** temperatures.
- ~~(101) The change of state from liquid to gas when heat is added to materials is called **Freezing process.**~~

## CT, PST, PET, DM, -----

(13)

(101) The change of state from liquid to solid when heat is removed from material is called **Freezing process**.

(102) water change into ice at  $0^{\circ}\text{C}$ .

(103) The change of state from liquid to gas when heat is added to a material is called **Boiling process**.

(104) Boiling point of water is  $100^{\circ}\text{C}$ .

(105) when liquid converts into gaseous state without boiling, the process is called **Evaporation process**.

(106) Evaporation process occurs only on the surface of **liquid**.

(107) when vapours change into liquid on cooling, the process is called **Condensation process**.

(108) The process in which some <sup>substance</sup> ~~state~~ change directly from solid state to gas without becoming liquid, when heat, is called **Sublimation**.

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(14) CT, PST, PET, DM,-----

(109)\* When Sun shines on rivers, lakes, ocean, water evaporates continuously and converts into clouds, The clouds when passes through some colder regions, they converts into Raindrops, and fall on earth and then on earth this rain water flows to rivers, oceans, The whole cycle/process is called **water cycle.**

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(110) ~~the~~ If There is no evaporation process in nature, There would be no **water cycle.**

(110) **Moisture** is the tiny drops of water present in the air.

(111) **Dew** is the moisture in the air that settles on plants due to cold.

(112) **Fog** is the droplet of water vapours in the air and are much close to the ground.

By:- ASIF JAVED RAHNI  
in ~~the~~ physics, CT, BED.

(15) **CT, PST, PET, DM, -----**

(109) Fog reduces **visibility**.

(110) When weather becomes cold enough to cause freezing, such condition of moisture is known as **Frost**.

(111) **Snow** is the frozen water falling from the sky in soft, white balls shape.

(112) **Rain** is the water falling in drops from vapours.

(113) In water cycle, water is available in **all Three states**.

(114) **Gas** fills all the volume available.

(115) In water cycle, the sun plays important role in **evaporation**.

(116) All physical objects are made of **matter**.

(117) water exists in **Three States**.

By:- **ASIF JAVED RAHNI** **MSc physics, CT, BED.**



(16)

CT, PST, PET, DM, ----

(118) Formation of cloud is an example of **evaporation** process.

(119) Dry ice is **carbon dioxide**.



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MPBEd physics, CT, BEd.

(a to z) ① "General Science"

chap # 6

FTS, NTS, ETEA

4<sup>th</sup>, 5<sup>th</sup>

CT, PST, PET, DM, ----

By:- ASIF JAVED RAHIZ  
MPSCL physics, CT, BED.  
PST, Gps Kotka M. Ali  
Khan

Related to chap # 8, class 4<sup>th</sup> :-

- ① The sensation of hearing is called sound.
- ② Sound is produced by vibrating bodies.
- ③ Sound is always produced by a vibrating body.
- ④ The sound that has a pleasant effect on our ears is called pleasant or musical sound.
- ⑤ The sound that has unpleasant effect on our ears is called noise.
- ⑥ Loud and unpleasant sounds all around us are called noise pollution.
- ⑦ Noise pollution causes damages to our ears and brain.

(2)

CT, PST, PET, DM, ---

- (8) Sound can not travel in **Vacuum**,
- (9) sound needs **medium** to travel.
- (10) The rabbit turns its outer ears to capture **sound waves**.
- (11) Snakes don't have **ears**.
- (12) Snakes feel the vibrations of their tongue and detect their prey and enemy.
- (13) The pleasant effect of sound is **music**.
- (14) Noisy environment is due to **unpleasant sound**.

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Related to chap # 9 = class 4<sup>th</sup> :-

- (15) The flow of electricity is called **Current**.
- (16) The materials through which electricity can pass are called **Conductors**.
- (17) The materials through which electricity can not pass are called **Insulators**.

By:- ASIF JAVED RAHIZ  
M<sup>PH</sup> physics, CT, BED.

③ CT, PST, PET, DM, -----

⑱ Iron, aluminum, gold, copper are the examples of **conductors**.

⑲ Rubber, plastic, wood, glass are the examples of **insulators**.

⑳ Electricity is dangerous and it can ~~be~~ cause **death** if improperly handled.

㉑ The path for flow of current is

<sup>or</sup> ㉒ The path in which current flows is called a **circuit**.

㉓ When the wire is connected and bulb is lit, this is called a **closed circuit**.

㉔ When the wire is disconnected and the bulb is off, this is called an **open circuit**.

㉕ A magnet attracts things made of **iron**.

㉖ A magnet has two poles, North pole and **South pole**.

By:- ASIF JAVED RAHİ MBSE physics, CTBEd.

(4)

## CT, PST, PET, DM, -----

- (27) ~~These~~ The magnets which are made with the help of electricity are called **Electromagnets**.
- (28) There are **two** types of magnet.
- (29) The **natural/permanent** magnets do not lose their magnetic qualities and are found in nature.
- (30) **Artificial/temporary** can lose their magnetic ability easily.
- (31) **Artificial** magnets are man made magnets.
- (32) The things which are attracted towards the magnet are called magnetic materials.
- (33) The things which a magnet does not attract, are called **non-magnetic** materials.
- (34) we need **electromagnets** to run an electric fan.
- (35) Like poles of magnet **repel** each other.

By:- ASIF JAVED RAHIZ  
MPTU physics, CTB ED.

## 5 CT, PST, PET, DM, -----

- (36) The north pole of a freely hanging magnet always points to the **North** of the earth.
- (37) The property of magnet to attract things is called **magnetism**.
- (38) When an iron or steel bar is rubbed against a magnet, **magnetism** is produced in it.
- (39) When a magnet is heated or struck by a hammer it loses its **magnetic property**.
- (40) Opposite poles of a magnet **attract** each other.
- (41) Iron particles of sand can be separated with the help of a **magnet**.
- (42) All **metals** are conductors.
- (43) **Artificial** magnets are demagnetized easily.

By:- ASIF JAVED RAHİ  
MAGNET physics, CT, BED.

6

CT, PST, PET, DM, -----

Related to chap #10, class 4<sup>th</sup> :-

- (44) The earth is one of the planets of our Solar System.
- (45) The earth is not a **perfect sphere**.
- (46) The earth **spins or rotates** on its axis.
- (47) The earth take **23 hours, 56 minutes and 4 seconds (about 24 hours)** for one complete rotation.
- (48) ~~The~~ one rotation of the earth on its axis, make **one day**.
- (49) The equator divides the earth into two parts
- (50) The upper part of earth, above the equator is called **Northern hemisphere**.
- (51) The lower part of the earth, under the equator is called **Southern hemisphere**.

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MPS & physics, CT, BED.

⑦ CT, PST, PET, DM, -----

⑤② The spin of the earth creates **day and night**.

⑤③ Circular movement of one thing around the other is called **Revolution**.

⑤④ The earth takes about **365 days and 6 hours** to make one revolution around the sun.

⑤⑤ When earth complete one revolution around the sun, this period is known as **One year**.

⑤⑥ There are **Four** seasons in a year.

⑤⑦ The four seasons are Summer, Autumn, winter and **Spring**.

⑤⑧ The earth's axis of rotation is tilted at  **$23.5^\circ$** .

\* ⑤⑨ If it is summer, the hemisphere will be tilted **towards the sun**.

⑥⑩ The tilt of the axis creates ~~sun~~ **Seasons**.

By:- ASIF JAVED RAHIZ <sup>Alp</sup> physics, CT, BED.



⑧

CT, PST, PET, DM, ---

⑥1 If the earth was not tilted on its axis, there would be no **Seasons**.

⑥2 If there is summer in the Northern Hemisphere, there is **winter** in the Southern.

(END of Chap # 10)

Some extra Mcqs (class 4th):-

⑥3 A **cavity** is a hole in a diseased tooth.

⑥4 Cavities are also called **Dental Cavies**.

⑥5 **Diarrhoea** is loose, watery stools.

⑥6 **Digestion** is the process by which food is broken down into smallest parts.

⑥7 **Food poisoning** is a general term for health problems arising from eating contaminated food.

By:- ASIF JAVED RAHI  
MPT PHYSICS, CT, BED.

9

LT, PST, PET, DM, -----

(68) A mixture which has a uniform composition and taste is called **homogenous Mixture.**

(69) A mixture which do not ~~have~~ has uniform composition and taste is called **Heterogeneous Mixture.**

(70) Conditions and practices that serve to promote or preserve health are called **Hygiene.**

(71) The precipitate of saliva that accumulates around teeth at the gum line is called **TARTAR.**

(72) Space occupied by a substance is called **Volume.**



Science Course of class 4<sup>th</sup> completed.  
By:- ASIF JAVED RAH  
MBA PHYSICS, CT, BED.

10

CT, PST, PET, DM, ~~~

Related to Chap # 6, class 5<sup>th</sup> :-

- 73) In order to move or stop an object **Force** is required.
- 74) Friction is a force that oppose **motion**.
- 75) Friction is a **Contact** Force.
- 76) Friction acts when objects are in **contact** with each other.
- (That is why friction is called **contact force**  $\Rightarrow$  Contact forces are those forces in which the contact of the bodies is must.)
- 77) Friction forces are **large** on rough surfaces. All Competitive Exam Preparation  
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- 78) Friction forces are **Small** on smooth surfaces.
- 79) The roughness on the surfaces of object/body is the cause of **Friction force**.
- 80) **Friction** helps us in walking and running.

By:- ASIF JAVED RAHIZI msc physics, CT, BED.

11

CT, PST, PET, DM, ----

81) Ignition of match stick is due to **Friction**.

82) Moving objects slow down due to **Friction**.

82) Friction produces **heat**.

82) Friction does not depend on the **Surface area**.

83) Friction depends on the **roughness** of the surfaces with which objects are in contact.

84) Lubricants, ball bearings, rollers, wheels, air cushions and stream lined shapes are used to reduce **Friction**.

85) **Gravity or gravitational** is the force ~~of~~ with which earth attracts other objects towards itself.

86) Force of gravity is a ~~not~~ **non-contact** force.

(i.e. **contact of bodies and earth is not necessary for gravity force**).

By:- ASIF JAVED RAH̄I ~~M~~ physics, CT, BED.

12

## CT, PST, PET, DMS

(87) The gravity force was first time observed by **Sir Isaac Newton**.

(88) The quantity of matter in an objects is called its **Mass**.

(89) Mass of the object is a **Constant** quantity.  
(i.e. **at mass of the bodies remains same (constant) everywhere**).

(90) The gravitational force acting on an object is called its **weight**.

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(91) The amount of gravitational force acting on an object is called its **weight**.

(92) The weight of a body is a **variable** quantity.  
(i.e. **weight of the body does not remain the same everywhere, its value is different from place to place or is different at different distances from the centre of the earth**)

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(13)

(93) If the forces acting on an object produce no change in state of rest or motion then the forces are said to be **balanced forces**.

(94) Balanced forces are equal and **opposite in direction**.

(95) when the forces acting on an object are not equal these forces are called **Unbalanced forces**.

(96) The SI unit of force is **newton (N)**.

(97) The SI unit of weight is **Newton (N)**.

( Because weight is a force i.e. force of gravity so its unit is also newton (N). )

(98) The SI unit of Mass is **Kilogram (kg)**.

(99) The tendency of all objects to resist any change in their state of rest or motion is called its **Inertia**.

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(14)

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- (100) A device which makes our work easier is called **Machines**.
- (101) Wedge, inclined plane and lever are examples of **Simple machines**.
- (102) Wedge is a **Simple machine**.
- (103) A sharpener is an example of **wedge**.
- (104) Inclined plane is a **Simple Machine**.
- (105) Inclined plane is used for **lifting objects to a height**.
- (106) ~~lever~~ ~~is~~ ~~a~~ ~~rod~~ ~~or~~ ~~bar~~ **(F)**  
In the lever **Pivot or Fulcrum** is a fixed point about which the rigid rod or bar turn.
- (107) The applied force on the lever is called **Effort (E)**.
- (108) The resisting force to the applied force in the lever is called **Load**.

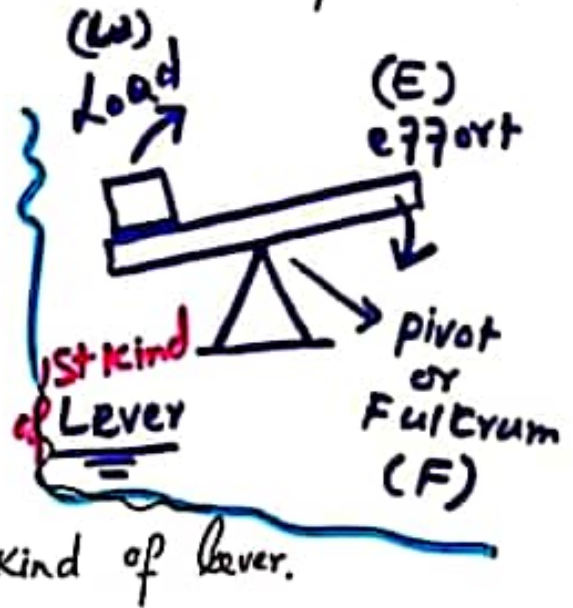
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(15)

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(109) There are **Three** kinds of lever.

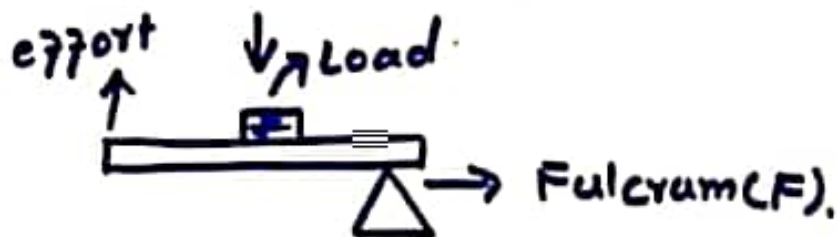
(110) In 1st kind of lever  
The fulcrum is between  
The effort and The load.



(111) Pliers, Scissors, claw hammer and sea saw are examples of **1st** kind of lever.

(112) In Second kind of lever, The Load is between The Fulcrum (F) and effort (E).

(113) Bottle opener, wheelbarrow, nut cracker, paper cutter and tin opener are examples of **Second** kind of lever.



Second Kind of Lever.

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114 In Third kind of lever, the effort (E) is between the Fulcrum (F) and Load.

115 Broom, tongs, human arm, stapler, fishing rod are examples of **Third** kind of lever.



Third Kind of Lever

116 Ball bearings reduce friction because they roll on surface to reduce friction.

( Friction is greater when bodies slide on each other, while friction is less when body roll on each other. So we use ball bearing, so that sliding friction (which is greater) converts into rolling friction (which is less).

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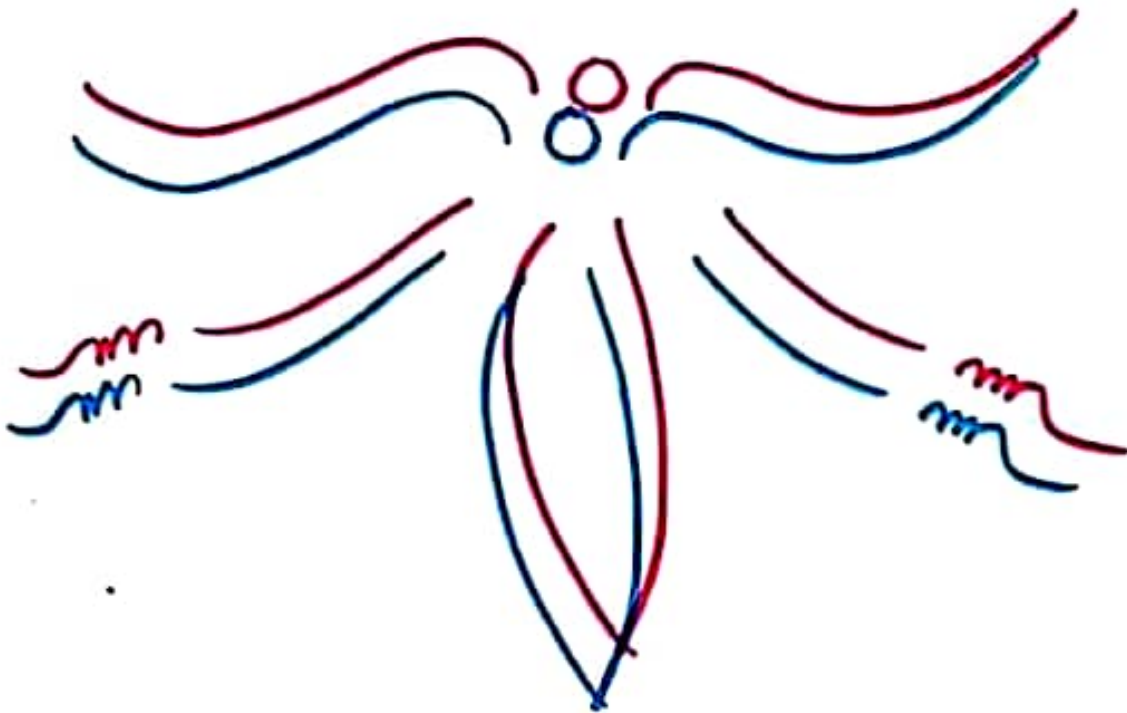
17

117 Gravity is responsible for falling of objects on earth.

118 There will be no motion if the forces are balanced.

119 Balanced forces are always equal.

120 A lever turns about a fixed point called **Fulcrum**.



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(ato 2) "General Science" chapter # 7  
5<sup>th</sup>

FTS, NTS, ETEA

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Related to chap # 7, class 5<sup>th</sup>:-

- ① Light is a form of **Energy**.
- ② We can not see without **Light**.
- ③ **Sun** is the largest natural source of light.
- ④ Objects that emit or give off out light of their own are called **luminous objects**.  
(Examples are Sun, bulb, candles, torch etc)
- ⑤ Sun and stars are **natural** sources of light.
- ⑥ Electric bulb, neon tube, candle, torch are **artificial** sources of light.
- ⑦ The objects that do not emit or give out their own light are called **non-luminous objects**.

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⑦ Moon is a **non-luminous** object.

(Because Moon ~~has~~ <sup>emits</sup> no light, it only reflects the light of Sun fall on it)

⑧ Non-luminous objects can only be seen when light falling on them reflects into our eyes.

⑨ Light travel **travels** than sound.

⑩ Light travels in a **straight** path.

⑪ If we can not see through an object then the object is called **opaque**.  
(eg wood, stone etc).

⑫ If we see clearly through an object then the object is called **Transparent**.

⑬ If we can not see clearly through an object, then the object is called **Translucent**.

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⑭ When an opaque object blocks the light, **Shadow** is formed.

⑮ The main source of light energy is **Sun**.

⑯ When the moon passes between the Sun and the Earth **Solar Eclipse** occurs.  
(سورج گرہن)

⑰ When the Earth passes through the Sun and the moon **Lunar Eclipse** occurs.  
(چاند گرہن)

⑱ Pinhole camera works on the principle that **light travel in straight line**.

⑲ Image formed on a screen may be **real or imaginary** image.

⑳ Moon is a/an **non-luminous** object.

㉑ Moon orbits the **Earth**.

㉒ An object which orbits a planet is called a **Satellite**.

㉓ Moon is a/an **natural** satellite.

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②4 phases of moon occur due to changes in **position** of moon.

②5 In **New** moon The surface of the moon is dark and invisible.

②6 when we see only a silver of the moon's surface, we call it **Crescent** moon.

②7 when we can see one half of the moon's surface, this is **Quarter** moon.

②8 <sup>when the moon getting</sup> Full → gibbous → half → crescent → new, The moon is **waning moon**.

②9 when the moon getting → new → crescent → half → Three quarters → full, The moon is **waxing moon**.

③0 when the moon surface is fully lighted, it is called **Full moon**.

③1 when we can see roughly three quarter of the moon's surface, it is called **Gibbous moon**.

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Related to chap # 8, class 5<sup>th</sup> :-

- ③② The rate of flow of charge across conductor is called **Current**.
- ③③ The Unit of Current is **Ampere**.
- ③④ The path through which electric current passes is called an/a **electric circuit**.
- ③⑤ \_\_\_\_\_ is a device used to reduce the danger of short-circuit or over flow of current.
- ③⑥ **Circuit breakers** are advanced form of fuse.
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- ③⑦ The branch of science that deals with the charges at rest is called **electrostatic**.
- ③⑧ charge is induced on the surface of the comb due to **Friction**.
- ③⑨ Lightening is a natural example of static discharge.

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⑥

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④① A charged body produces **electric field** around it.

④② **Similar** charged bodies repel each other.

④③ **opposite** charged bodies attract each other.

④④ **Electroscope** is used for finding the nature of charge on a body.

④⑤ In magnet the same poles (N-N) or (S-S) repel each other while the opposite poles (S-N) attract each other.  
(S → South pole, N → North pole)

④⑥ The magnetic effect is stronger at **poles** and weaker at **Centre**.

④⑦ Magnet has **Two** poles.

④⑧ Magnet has **South** pole and **North** pole.

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⑦ CT, PST, PET, DM, - - - - -

- ④⑧ The space around a magnet in which its magnetic effect is felt is called **magnetic field**.
- ④⑨ The effect of magnetic field can be felt by using **small test magnets**.
- ⑤⑩ The magnetic field around a magnet is represented by **Magnetic lines of force**.
- ⑤⑪ The magnetic field is **not** visible.
- ⑤⑫ The magnetism produced by electric current is called **electromagnetism**.
- ⑤⑬ Large electromagnets are used in some cranes to lift **heavy iron objects**.
- ⑤⑭ The Earth behaves like a magnet with **two** poles.
- ⑤⑮ **Compass** is used to find the direction.

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