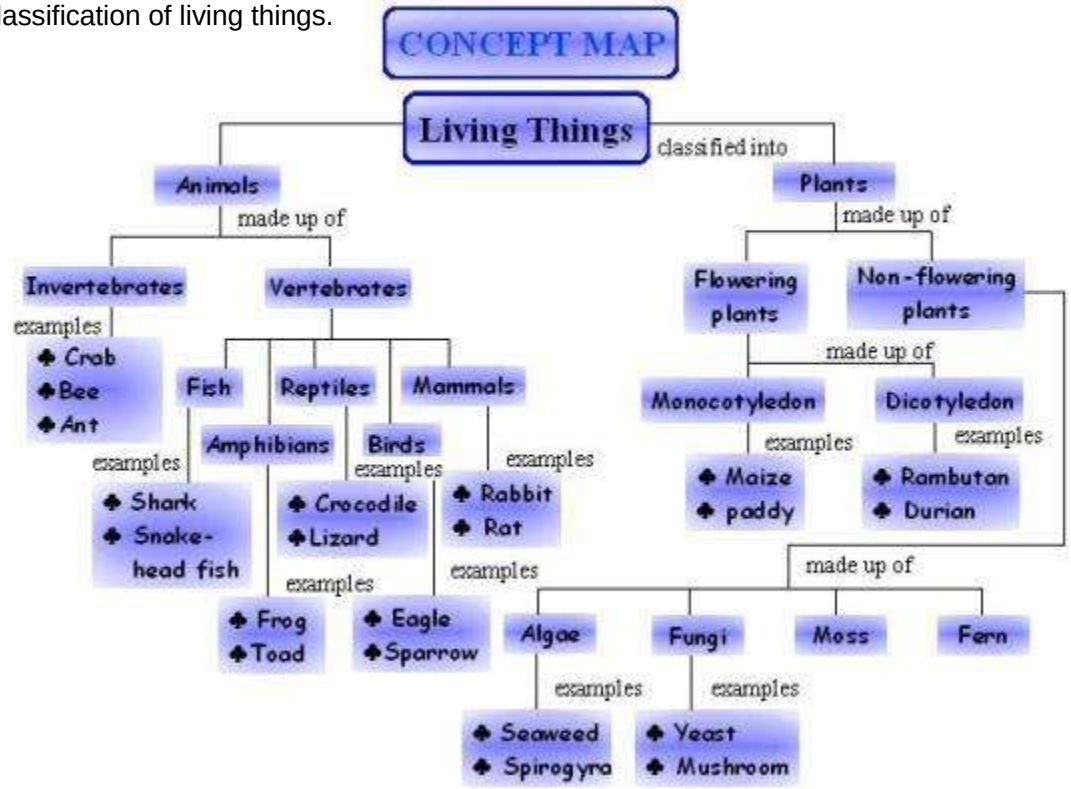
CDT Materials(2018-19)

Class – V

EVS and GK

1. LIVING WORLD

- Living things are called organisms including plants, animals and human beings. The organisms get everything from environment in order to survive. As far as we know the characteristics shared by every living organism on this planet are:
- Are made of cells • Are organized on different levels • Use energy (metabolism) • Reproduce • Maintain stable internal conditions (homeostasis) • Have inherited traits (heredity)
- Animals and plants respond to things in their environment and many can adapt in order to survive. All living things grow and develop. However, there are living organisms that do not move, such as coral, and there are many nonliving things to do move, such as a car and clouds.The study of organisms interacting with their environment is the science of ecology.
- Some more common characteristics are movement, Response to the environment, growth and development.
- All living organisms are classified into groups based on very basic, shared characteristics. Organisms within each group are then further divided into smaller groups. These smaller groups are based on more detailed similarities within each larger group. This grouping system makes it easier for scientists to study certain groups of organisms. Characteristics such as appearance, reproduction, mobility, and functionality are just a few ways in which living organisms are grouped together. These specialized groups are collectively called the classification of living things.



The basic needs of living things:

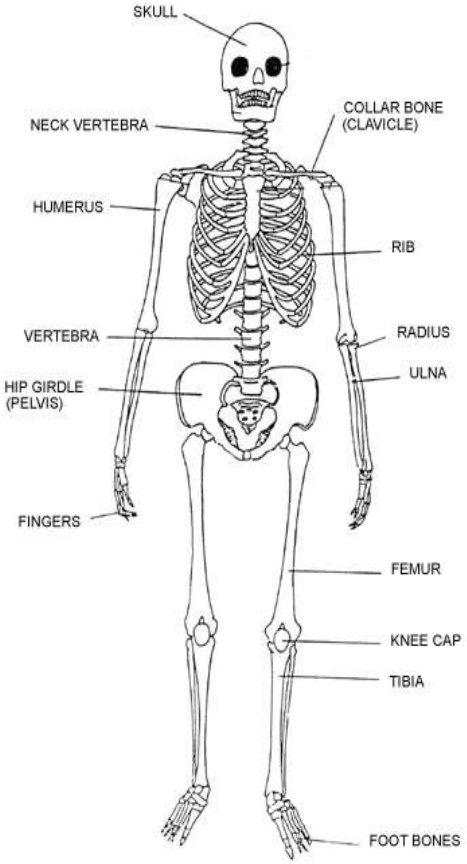
Every living organism on earth needs some basic things to survive. The amount, way, form or kind of these needs vary from organism to organism.

For example, water is a basic need for survival. The amount of water a frog needs to survive is not the same as the amount of water a desert cactus plant needs to survive. They all need water, but because they are different living organisms, their water needs will be different, even though they both need water to live.

There are five basic needs that all living things have. They are sunlight, water, light, air, food and habitat with right temperature. All plants use sunlight to make food (sugars) in a process called photosynthesis. They store the food in their leaves and the energy flows to other animals that eat the leaves. When leaves fall, decomposers in the soil, work on it, with the help of moisture and heat from the sun.

2. LOCOMOTORY SYSTEMS OF HUMANS:

- Locomotion means movement. Various organisms have different organs for their movement and these are called locomotoryorgans. The coordination for the movement in our body is done by skeletal system, muscular system and nervous system.
- A) Skeletal System: The skeletal system in humans is the mineralized internal framework and scaffolding of the body consisting of bones, joints and associated cartilages. An adult human has 206 bones in their body and variety of different joints.
- From our head to our toes, bones provide support for our bodies and help form our shape. The skull protects the brain and forms
  the shape of our face. The spinal cord, a pathway for messages
  between the brain and the body, is protected by the backbone,
  or spinal column.
- The ribs form a cage that shelters the heart, lungs and the pelvi
  helps protect the bladder, intestines, and in women, the reproductive organs.
- Three bones in the inner ear, called malleus, incus and stapes,
  are the smallest bones in the human body. The thigh bone or femur,
  is the largest bone.
- Newborn babies have about 300 bones. Many of these bones
  fuse together to form the 206 bones of the adult.
- Joints are formed when bones come to each other.
- Bones are made up of calcium, phosphorus, sodium, and other minerals,
  as well as the protein collagen.
- The **six types** of freely movable joint include ball and socket, saddle,
- hinge, condyloid, pivot and gliding.



B) Muscular system:

- Our human body consists of more than 600 muscles which help us move our limbs and even help other internal organs in their functional movements.
- There are two types of muscles…voluntary muscles and involuntary muscles. Voluntary muscles act according to our wish. Examples-Muscles of arms and legs.

Involuntary muscles are those which act without our wish.Examples-Muscles of heart, stomach and brain.

- Three basic muscle types are found in the body are skeletal muscle, cardiac muscle and smooth muscle.

C) Nervous system :

- The brain is the most complex part of the human body. It is the center of consciousness and also controls all voluntary and involuntary movements and bodily functions. It communicates with each part of the body through the nervous system, a network of channels that carry electrochemical signals.

- The organs of nervous system are brain, spinal cord and nerves.
- Your brain makes your muscles move by sending tiny electrical signals to them through your nerves. Neurons are the nerve cells that are really long and are all bunched together. Those really long neurons each send a small electrical shock to your muscles, which makes them move, moving your body.
- The brain and spinal cord are inside your skull and vertebrae (the vertebrae make up your backbone). These bones protect the Central Nervous System when you get into accidents.

3) FOOD SOURCES AND DEFICIENCY DISEASES:

- Our body requires different types of essential nutrients for the normal growth ,development and preventing diseases. These essential nutrients include both micronutrients and macronutrients.
- Micronutrients are the group of nutrients which are required in trace amounts as it cannot be produced naturally by our body.
- Macronutrients are the group of nutrients which are required by the body in large amounts for body building, growth and energy.
- The improper supplements of these nutrients lead to a variety of deficiency diseases.

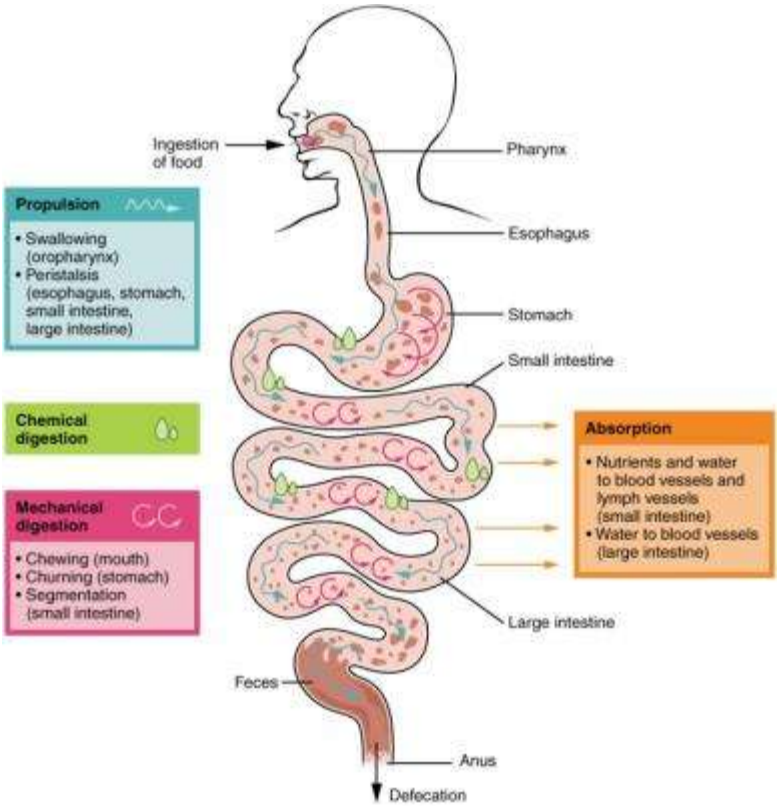
Here is the list of all essential nutrients, their sources, and their deficiency.

Nutrients	Food Sources	Deficiency Diseases
Carbohydrates	Cereal, whole grains, legumes, potatoes, cheese, pasta, etc.	Hypoglycaemia and Ketoacidosis.
Proteins	Almonds, eggs, chicken, yogurt, cottage cheese, oats, seafood, beans and pulses, milk and other dairy products.	Kwashiorkor and Marasmus.
Iodine	Eggs, nuts, bread, seaweed, dairy products, and iodized table salt.	Goitre, (swollen throat) Hypothyroidism.
Iron	Green leafy vegetables,meat,fish,eggs, beans, Pulses, dry fruits and whole grains.	Anaemia
Calcium	Dates, spinach, almonds, soybeans eggs, beans, lentils milk, and all other dairy products.	Muscle spasms, low bone density, and Hypocalcaemia.
Sodium	Onions, cabbage, sweet potato, broccoli,	Gastrointestinal Distress, the Improper

	pumpkin seeds, eggs and milk	functioning of nerves and muscles.
Phosphorous	Milk, yogurt, soy products, beans, whole grain food products, potatoes, peas, etc.	Weak bones and muscles, joint pains, nervous system disorders, obesity, etc.
Vitamin – A	Green leafy vegetables, yellow colored fruits, milk, nuts, tomatoes, carrots, broccoli, etc.	Night Blindness and other vision problems.
Vitamin –B	Whole-grain foods, legumes eggs, green leafy vegetables milk and milk products, etc.	Beriberi.
Vitamin –C	Citrus fruits, broccoli, milk, and chestnuts.	Gum bleeding and Scurvy.
Vitamin –D	Fish, liver, egg yolks, cheese, citrus fruit juices, soy milk, cereals, etc.	Improper growth of bones and Rickets.
Vitamin –E	Potatoes, turnip, pumpkin, avocado, guava, olives, mango, olives, milk, nuts, seeds etc.	Heart problems and Haemolysis.
Vitamin –K	Tomatoes, chestnuts, broccoli, beef, cashew nuts, lamb, mangoes, etc.	Haemorrhage.

4)**LIFE PROCESS:**

- Various functions carried out by living beings within their bodies to survive are called life processes.
- They aremovement,reproduction, sensitivity, nutrition, excretion, respiration and growth and reproduction.
- Different life processes of an organism, like growth and maintenance, require energy which is obtained from food by a process called nutrition. Different organisms have varied nutritional processes depending on their environment and specific food requirements.
- Here we are going to refer about process of digestion in humans and types of reproduction in plants and animals.
- Digestion: The process of breaking down of complex component of food into simpler substances is called digestion.
- The process of digestion begins from the mouth and is completed in the small intestine. When we consume food, it travels from our mouth and reaches our stomach through a long tube called as an alimentary canal or the gastrointestinal tract.
- During the movement of food particles from mouth to the stomach and to the small intestine, it gets digested gradually as they travel through various compartments of the gastrointestinal tract. The process of digestion begins



from the mouth cavity and ends in the anus.

- The food undergoes many chemical reactions in our body during the process of digestion.
- There are special proteins in our cells that make things happen very fast. These special proteins are called **enzymes** and their job is to speed up chemical reactions.
- Few enzymes help us to digest the food we eat.For example, salivary amylase is an enzyme found in saliva, which is the fluid in your mouth. This enzyme helps break down carbohydrates. When you eat a carbohydrate, like a potato, salivary amylase breaks the bonds that hold the carbohydrate together.
- As the bits of potato continue to move through your digestive tract, they get broken down by even more enzymes until they are small enough to get absorbed by your body.

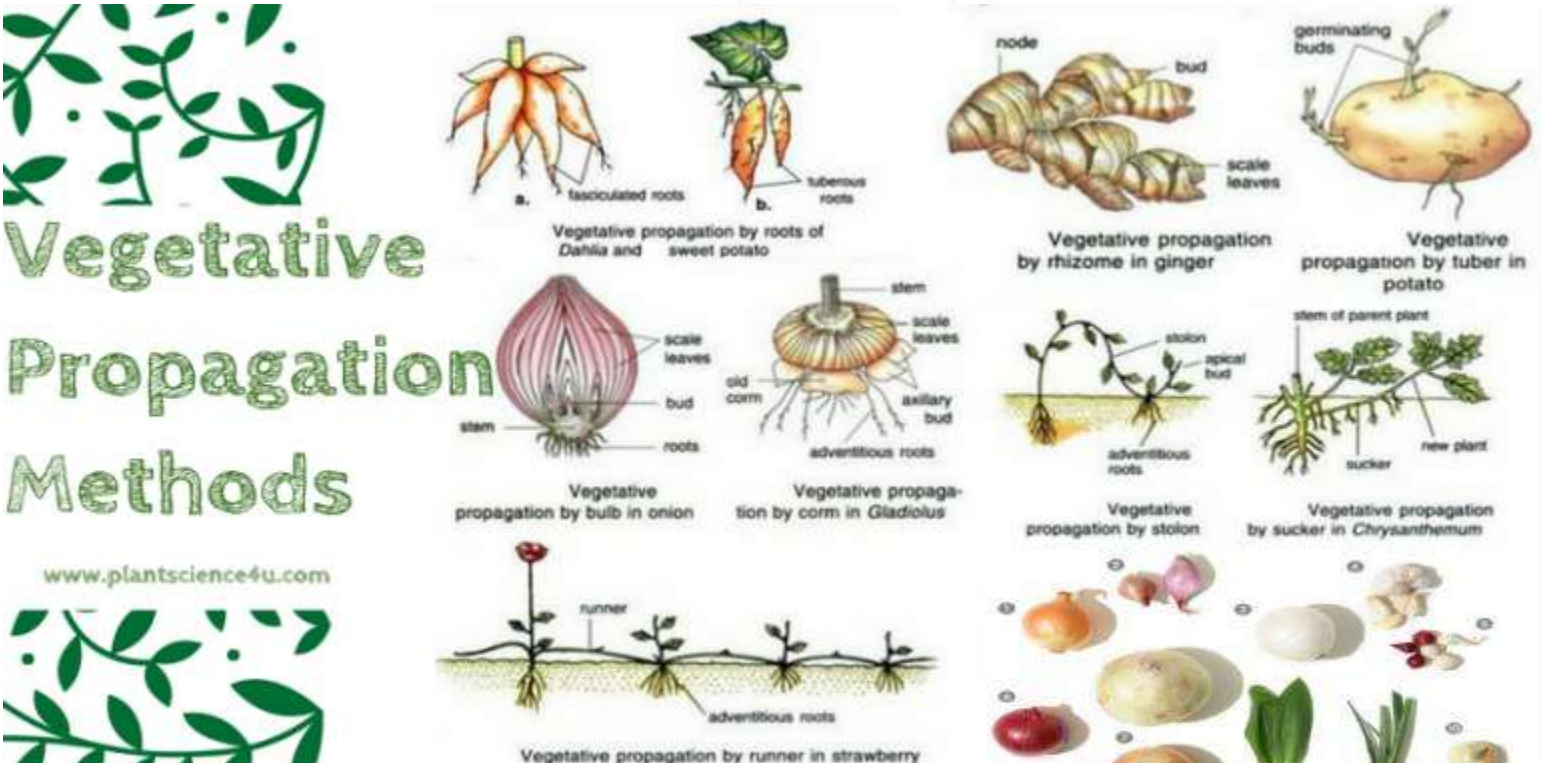
Reproduction:

- All living things produce young ones like themselves so that life on Earth can continue.
- The process by which plants and animals produce their young ones (offsprings) is called reproduction.
- There are two major classifications, **sexual** and **asexual** reproductions. Each has its own advantages and disadvantages and each is appropriate for different species, humans are almost exclusively sexual in their reproduction. Many simpler animals are asexual.
- In the case of animals two types of methods are there for reproducing young ones.

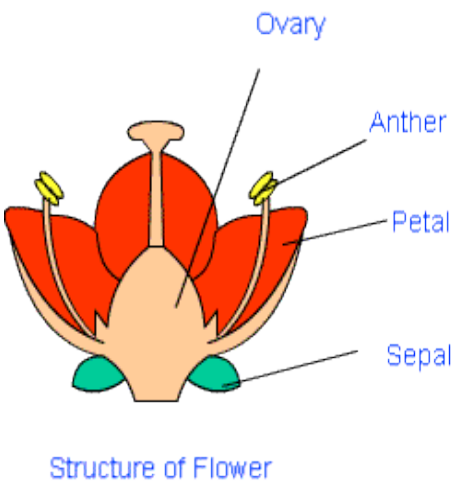
- Plants also reproduce in both sexual and asexual methods. The asexual reproduction of plants is also called vegetative reproduction. Plants are capable of producing from their vegetative parts like stem, leaves and roots.

Differences between ovipary and vivipary

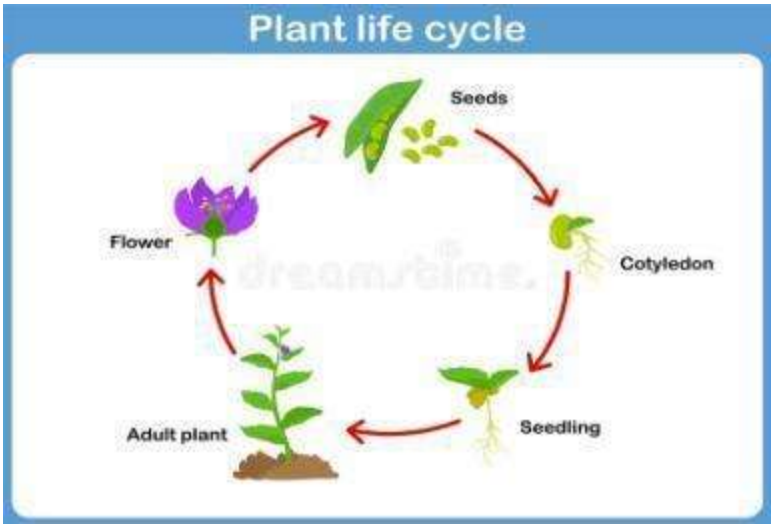
	Ovipary		Vivipary
1.	Oviparous animals lay fertilized or unfertilized eggs.	1.	Viviparous animals give birth to young ones.
2.	The fertilized eggs remain covered by hard calcareous shell and laid in safe place in the environment. After a period of incubation young ones hatch out.	2.	The fertilized egg (zygote) develop into a young one inside the body of the female organism.
3.	Chances of survival of young ones is less as the female lay egg in the open environment.	3.	Chances of survival of young one is more because of proper embryonic care and protection inside the mother's body.
	Examples: Birds and reptiles		Examples: Most of the mammals like human, cow, lion, tiger, horse, rat, cat, dog, etc.



- *The reproductive part of the plant is flower. It has both the male part (anther) and the female part (ovary) in it*



Structure of Flower



- The ovary of the flower develops **into** a fruit while ovules develop **into seeds**. Within the **seed**, the **growing** embryo develops and matures into a new plant.

5. CELESTIAL/HEAVENLY BODIES:

- Any natural body outside the Earth's atmosphere is called a celestial body or a heavenly body. The objects such as sun, moon, planets and stars are considered as heavenly bodies or Astronomical objects.

1. Black hole	A place in space where gravity pulls so much that even light cannot get out.
2. Constellation	A group of stars that are considered to form imaginary outlines or meaningful patterns on the celestial sphere representing shapes.
3. Asteroid	A small rocky body orbiting the sun.
4. Zenith	The point on the celestial sphere that is directly above the observer.
5. Planet	A celestial body moving in an elliptical orbit round a star.
6. Orbit	The curved path through which objects in space move around a planet or star.
7. Moon	Earth's natural satellite.
8. Meteor	A piece of rock or other matter from space that produces a bright light as it travels through the atmosphere.
9. Satellite	A satellite is anything that orbits something else.
10. Eclipse	The partial or total blocking of light of one celestial object by another.
11. Comet	A small, icy object that orbits the sun and has a long "tail" of gas.
12. Meteorite	A piece of rock or other matter from space that has landed on earth.
13. Galaxy	A system of millions or billions of stars, together with gas and dust, held together by gravitational attraction.
14. Gravity	A force that exists among all material objects in the universe.

Abbreviations and Acronyms.

Sl.	Short form	Full form
1.	**AICTE**	All India Council Of Technical Education.
2.	**ASEAN**	Association Of South East Asian Nations.
3.	**BARC**	Bhabha Atomic Research Centre.
4.	**BHEL**	Bharat Heavy Electricals Ltd.
5.	**BIMSTEC**	Bangladesh, India, Myanmar, Srilanka, Thailand Economic Cooperation
6.	**CAG**	Comptroller and Auditor General Of India.
7.	**CBDT**	Central Board Of Direct Taxes.
8.	**DNA**	Deoxyribo-nucliec Acid
9.	**DTP**	Desktop Publishing
10.	**FIR**	First Information Report
11.	**GATE**	Graduate Aptitude Test in Engineering
12.	**GSLV**	Geo-Synchronous Satellite Launch Vehicle
13.	**GSM**	Global System for Mobile Communications
14.	**IPC**	Indian Penal Code
15.	**LASER**	Light Amplification by Stimulated Emmission of Radiation
16.	**NABARD**	National Bank for Agriculture and Rural Development.
17.	**NATO**	North Atlantic Treaty Organization.
18.	**ONGC**	Oil and Natural Gas Corporation.
19.	**SEBI**	Securities and Exchange Board of India.
20.	**WWW**	World Wide Web

Books and Authors

Sl.	Book	Author
1.	**Akbarnama**	AbulFazal
2.	**Chitra**	RabindraNath Tagore
3.	**Gitanjali**	RabindraNath Tagore
4.	**Godan**	Prem Chand

5.	**Guide**	R K Narayan
6.	**Hamlet**	William Shakespare
7.	**Harvest**	ManjulaPadmanabhan
8.	**Jungle Book**	Rudyard Kipling
9.	**Saket**	Maithili Sharan Gupta
10.	**The Dairy of a Young Girl**	Anne Frank

Important dates and days

Sl.	**Days**	**Event**
1.	**January 30**	Martyr's Day
2.	**March 20**	World Day for Water
3.	**April 7**	World Health Day
4.	**April 22**	Earth Day
5.	**July 11**	World Population Day
6.	**August 29**	National Sports Day
7.	**September 15**	Engineer's Day
8.	**September 27**	World Tourism Day
9.	**October 9**	World Post Day
10	**October 16**	World Food Day

Important awards and honors.

Sl.	**Awards**	**Concerned Field**
1.	**BhartaiyaJnanpith Award**	**Literary Award for Indian Languages**
2.	**SahityaAkademi Award**	**Outstanding Literary Contribution**
3.	**SaraswatiSamman**	**Outstanding Literary Contribution**
4.	**Kalinga Prize**	**Popularising Science**
5.	**Dada SahebPhalke Award**	**Film**
6.	**TulsiSamman**	**Traditional and folk arts.**
7.	**Arjuna Award**	**Sports**
8.	**Dronacharya Award**	**Coaches to different games**
9.	**Booker Prize**	**Novels in English**

10	**Roman Magsaysay Award**	**Outstanding Contribution to Public Services.**

Scientific Instruments and Uses

Some of the important scientific instruments are listed below.

Sl.	Instruments	Uses
1.	**Altimeter**	In aircraft to measure altitude.
2.	**Ammeter**	Electric current.
3.	**Audiometer**	Intensity of sound
4.	**Barometer**	Atmospheric pressure
5.	**Cardiogram**	Tracing movement of heart
6.	**Dynamo**	Mechanical energy to electrical energy
7.	**Galvanometer**	Small current
8.	**Hydrometer**	Specific gravity of liquids
9.	**Lactometer**	Purity of milk
10	**Odometer**	Electric or mechanical vibrations
11.	**Rain gauge**	Rainfall at a place
12.	**Stethoscope**	Movements and condition of heart and lungs.
13.	**Telescope**	To view distant objects.
14	**Transformer**	High voltage to low voltage and vice-versa.
15.	**Xylophone**	Musical instruments with tuned wooden bars of different dimensions.

Sample Questions

1. The study of organisms interacting with their environment is the science of
a) Physiology b) ecology c)geology d)social studies **Ans: b**

2. These are inside our skull and vertebrae
a) Kidney and heart b) lungs and heart c)stomach and kidneys d) brain and spinal cord **Ans: d**

3. The type of signals that are carried by network of channels through which the brain communicates with the body parts are
a) Electrochemical b) chemical c) electrical d) physical **Ans:a**

4. In the process of digestion the breaking down of food components is from
a) Complex to simple b) simple to complex c)simple to simple d) complex to complex **Ans:a**

5. The job of enzymes is to _____ the chemical reactions
a) Speed upb) stop c) slow down d) react with **Ans: a**

6. Which type of animal is a dog?
a) Oviparous b) viviparous c) both d) none **Ans: b**

7. The type of reproduction through which the plants are capable of producing new plants from leaves, root and stem is called
a) Sexual reproduction b) growth c) vegetative reproduction d) plant movement **Ans: c**

8. The sexually reproducing part of the plant is
a) Stem b)leaf c) root d) flower **Ans : d**

9. The gastrointestinal tract or digestive tract of humans starts from
a) Food pipe to large intestine b) mouth to stomach c)liver to anus d) mouth to anus **Ans: d**

10. The group of nutrients that are required by the body in large amounts are
a) Macro nutrients b) mixed nutrients c) trace elements b) micro nutrients **Ans :a**

11. Our bones are made up of by these minerals
a) Iron and iodine b) iron and phosphorous c) iodine and calcium d) calcium and phosphorous **Ans: d**

12. Deficiency of the vitamin A in our body leads to
a) Night blindness b) rickets c) Scurvy d) Beriberi **Ans: a**

13. The moon is Earth's
a) Artificial satellite b) orbit c) natural satellite d) star **Ans: c**

14. Any natural body outside the Earth's atmosphere is called
a) Geographical body b) celestial body c) biological object d) aquatic body **Ans: b**

15. The largest bone in our body is
a) Collar bone b) rib cage c) hip bone d)Thigh bone or Femur **Ans :d**

16. Which of the following award is given for contribution in public services?
a)Kalinga Prize b).LataMangeshkar Prize
c). Booker Prize d). Roman Magsaysay Award **Ans: d**

17. Which Day is celebrated as World Health Day?
a). 30 January b). 1 April
c) 7 August d). 7 April **Ans: d**

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