ACADEMIC SESSION 2017-18

BIOLOGY

SMART SKILLS

KEY FEATURES OF SCIENCE SMART SKILLS

- This edition is enriched with activities, crosswords, multiple choice questions, in-text questions etc. to check the child's grasp of the concept.

- The activities will help to focus child's attention on the concept to follow and explain and reinforce the scientific concepts.

- The **LET US DO** sections have activities like research, group work etc. which will help the child to apply the concepts of science.

- Last but not the least – This smart skill has been prepared to help the children develop a scientific aptitude by
    - Reinforcing concepts
    - Strengthening expression
    - Developing independent thinking
    - Understanding the reasoning of day to day phenomena

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SYLLABUS

BIOLOGY

<u>Ist Term Syllabus: April 17 to Aug 17</u>

APRIL-MAY:

Chapter 2: Microorganisms: Friend and Foe

Chapter 7: Conservation of plants and animals. (Holidays Homework)

Chapter 8 : Cell-Structure and functions

JULY-AUG

Chapter 8: Cell structure and function -continued

First Term Exams.—September 2017

<u>IInd Term Syllabus: Sep 17 to Feb 18</u>

SEP- Oct: Chapter 9: Reproduction in animals

Nov--Dec: **Chapter 10:** Reaching the age of adolescence

JAN-- Chapter 1 : Crop production and management(from handout)

FEB: **Chapter 18:** Pollution of air and water (Project-Poster Making).

Revision

Second Term Exam... March 2018

Chapter - 1

CROP PRODUCTION AND MANAGEMENT

AGRICULTURE

The science that deals with the growth of plants and animals for human use is called *agriculture*.
Agriculture includes-

- Soil management- the cultivation of soil
- Crop farming- growing and harvesting of crops.
- Horticulture- growing and harvesting of fruits, vegetables, flowers and decorative plants
- Animal husbandry- the breeding and raising of livestock including poultry

The land where plants are cultivated is known as *fields*.
Plants grown in large quantities in field are known as *crop plants or crops*.
Based upon the seasons, the crops are divided into two types- summer crops called *kharif crops* and winter crops called *rabi crops*.
Kharif crops are grown during summer between June/July and harvested by September/October. Rice, groundnut, maize, cotton , pulses are some common kharif crops.
Rabi crops are grown in the winter between October/November and harvested by March or April. Wheat, barley, mustard, potato and peas are some common rabi crops.

The tasks that a farmer follows are called agricultural practices. The major steps involved in this process are-

- Preparation of soil
- Selection and sowing of seeds
- Addition of manure and fertilizers
- Irrigation
- Protection from weeds and pests
- Harvesting
- Storage

Preparation of soil:

Ploughing or tilling involves loosening and turning of soil using a tool or an implement called the plough. Then the soil is leveled.
Loosening of the soil-

1. Allows the roots to breathe easily
2. Helps the roots to penetrate deeper into the soil.
3. Enables fertilizers to mix uniformly with the soil.

4. Aids the growth of organisms such as earthworms, millipedes, bacteria and fungi.

Sowing of seeds:

Seeds used for sowing should be of good quality, healthy, viable and free of infections. Seeds are sown manually by broadcasting or by seed drills. *Broadcasting* is the scattering of seeds over the soil surface by hand.

Addition of manure and fertilizers:

Plants require nutrients for growth. They get these nutrients from the soil. This can be done either by natural methods or by adding manures and fertilizers to the soil.

Natural methods:

Field fallow: The method of leaving the field without cultivating any crops to replenish nutrients in the soil.
Crop rotation: It involves growing two or more crops alternatively on the same land in the same growing season so that the soil is not depleted of any particular nutrients.

Differences between manures and fertilizers:

Differences between manures and fertilizers:	
Manures	**Fertilizers**
These are natural organic substances that are derived from animal wastes and plant residues.	These are inorganic salts made by humans.
These are rich in humus but not in inorganic nutrients.	These are rich in inorganic nutrients but do not contain humus.
They are quite bulky and difficult to transfer.	They are less bulky and easy to handle.

Irrigation:

Irrigation is the artificial supply of water to farms when needed.
Some of the modern irrigation methods are as follows:

- Sprinkler system
- Drip irrigation

Protection from weed and pests:

Weeding:

- Weeds are unwanted plants that grow along with the crops. They compete with the crops for water, minerals and sunlight and, therefore reduce crop yield.
- Amaranthus is very common weed which grows with almost every crop.
- Weeding can be done manually using a trowel or a harrow or by using a seed drill using certain chemicals called weedicides for example- 2,4-D. some common weedicides are Dalapon, Siniazine and Picloram.

Pests:

- Insects that attack crops and damage them are called pests.
- Pests can be controlled by pesticides which are poisonous chemicals. Pesticides kill pests as well as their eggs and larvae but do not affect the plants.

Harvesting:

- *Harvesting* is the cutting and gathering of the mature crop from the fields.
- *Threshing* is the process of removal of the edible part of grain from the scaly, inedible chaff that surrounds it.
- *Combine harvester* is a farm machine which does both harvesting as well as threshing.
- *Wind winnowing* is a method of separating grain from chaff by throwing the mixture into the air with a winnowing fan.

Storage:

Large scale storage of grains is done in granaries or silos to protect them from pests like rodents, microbes or insects.

Increasing crop produce:

Crop produce can be increased by increasing the land under cultivation, by improvement in the methods of agriculture, and by developing better varieties of crops by plant breeding.
Hybridization is a technique used for plant breeding in which new varieties with desired characteristics of high yield and resistance to disease, are developed.

Nitrogen cycle:

Air contains about 78% nitrogen. Nitrogen is used by life forms for the formation of protein, amino acids and nucleic acids.

The cyclic process of nitrogen being fixed, used by plants and animals and later returned to the atmosphere is referred to as the nitrogen cycle.

Nitrogen cycle involves the following steps:

- *Nitrogen fixation:* fixing free nitrogen gas of the atmosphere into inorganic compounds by organism such as Rhizobium.
- *Nitrogen assimilation:* converting inorganic nitrogen into usable organic compounds in organisms.
- *Ammonification:* Conversion of organic nitrogen into ammonia.
- *Nitrification:* Ammonia is converted into nitrates in the soil with the help of bacteria.
- *Denitrification:* Conversion of nitrates into nitrogen gas by denitrifying bacteria.

Animal husbandry:

- The breeding, feeding and caring of domestic animals for food and other purposes is called animal husbandry.
- Meat or egg yielding animals such as goat, poultry animals (e.g. chicken, duck and turkey), fish, sheep.
- Milch or (milk yielding) animals such as cow, buffalo, goat and camel.
- Large scale rearing of fish for food is known as *pisciculture*.
- Large scale rearing of honeybee is known as *apiculture*.

Find Out More:

Organic Farming

The harmful fallout of Green Revolution in Punjab

Any Organic product that you have purchased: What does the label say?

Sustainable Farm Practices

CHAPTER 2

MICROORGANISMS: Friend and Foe

Organisms too small to be seen with the naked eye are called as microorganisms or microbes. These are found everywhere soil, water and air. They can survive in ice cold or hot springs desert and marshy lands. Microbes are classified into five groups: **viruses, protozoans, bacteria, algae and fungi**. Microbes can be unicellular (bacteria, and fungi), filamentous (cells joined end to end; such as algae) or multicellular (fungi).

Microorganisms and Human beings: Microbes play an important role in our lives. Some of the microbes are beneficial while others are harmful and cause diseases.

Microbes and their uses:

(i) Microbes such as *Lactobacillus* are used in the preparation of curd and cheese
(ii) Microbes such as yeast (a unicellular fungus) are used in the bakery
(iii) Yeast is also used in the production of alcohol, wine and vinegar (acetic acid) as yeast has the ability to convert sugar into alcohol/acid. This process is fermentation.
(iv) Some bacteria have the ability to increase soil fertility by fixing nitrogen. They are called as biological nitrogen fixers. These bacteria can be free living or found in symbiotic association with the roots of the leguminous plants.
(v) As decomposers they clean up the environment by breaking down dead plant and animals and return the minerals to the soil (farmers utilize this characteristic of microbes to obtain manure/compost).From human and animal wastes bacteria form biogas which is used for cooking purpose or making electricity.
(vi) Fungi and bacteria are used in preparation of antibiotics (medicines that kill or stop the growth of the disease causing bacteria).

Disease causing microorganisms:

PATHOGENS: disease causing microorganisms are called pathogens.

COMMUNICABLE DISEASES: diseases that can spread from an infected person to a healthy person trough air, water, food or physical contact.

CARRIERS: insects and animals which carry disease-causing microbes.

VECTORS: organisms which carry disease causing organisms & in whom a part of the life cycle of the pathogen takes place.

SOME COMMON DISEASES CAUSED BY MICROORGANISMS

- **Diseases caused by Bacteria:**

DISEASE	ORGANISM AFFECTED	MODE OF TRANSMISSION	CARRIER(if any)
Tuberculosis	Humans	Air droplets	
Cholera	Humans	Water/food	housefly
Typhoid	Humans	Water	housefly
Anthrax	Humans & cattle's	Air/water/food/contact	

Citrus canker	Citrus fruits(plants)	Air	

- **Diseases caused by Virus:**

DISEASE	ORGANISM AFFECTED	MODE OF TRANSMISSION	CARRIER (if any)
Measles	Humans	Air	
Chicken pox	Humans	contact	
Polio	Humans	Water	housefly
Hepatitis B	Humans	Water	
Foot & mouth disease	Cattles	Inhalation of virus particle/direct contact	
Yellow vein mosaic of bhindi(Okra)	Bhindi(plants)	Insect(carrier)	

- **Disease caused by fungus:**

DISEASE	ORGANISM AFFECTED	MODE OF TRANSMISSION
Rust of wheat	Wheat(plants)	Air, seeds

- **Disease caused by Protozoa**:

DISEASE	ORGANISM AFFECTED	MODE OF TRANSMISSION
Malaria	Humans	Mosquito(vector)

FOOD POISIONING:
Microorganisms grow on food & produce toxic substances which make the food poisonous & unfit for consumption.

FOOD PRESERVATION:
Food can be preserved by the following methods:

METHOD OF PRESERVATION	FOOD PRODUCT PRESERVED

By adding chemicals like sodium benzoate & sodium meta bi sulphite (chemical method)	Jams, squashes
By adding common salt	Meat, fish, amla, raw mangoes, tamarind
By adding sugar	Jams, jellies, squashes
By adding oil & vinegar	Pickles, vegetables, fruits. Meat
By pasteurization (it involves heating of milk to about 70°C for about 15-30 sec followed by sudden chilling)	Milk
By storage and packaging in air tight packets	Dry fruits, vegetables

NITROGEN FIXATION:
It is the process of converting free nitrogen in the atmosphere into compounds of nitrogen. It can be done in two ways:
Atmospheric fixation: by the action of lightening.
Biological fixation: by certain bacteria & blue green algae. Bacterium *Rhizobium* lives in the root nodules of leguminous plants & converts atmospheric nitrogen into compounds of nitrogen.

NITROGEN CYCLE:
Nitrogen is an essential constituent of proteins, chlorophyll, nucleic acids & vitamins. As a result of nitrogen cycle the percentage of nitrogen in the atmosphere remains more or less constant.

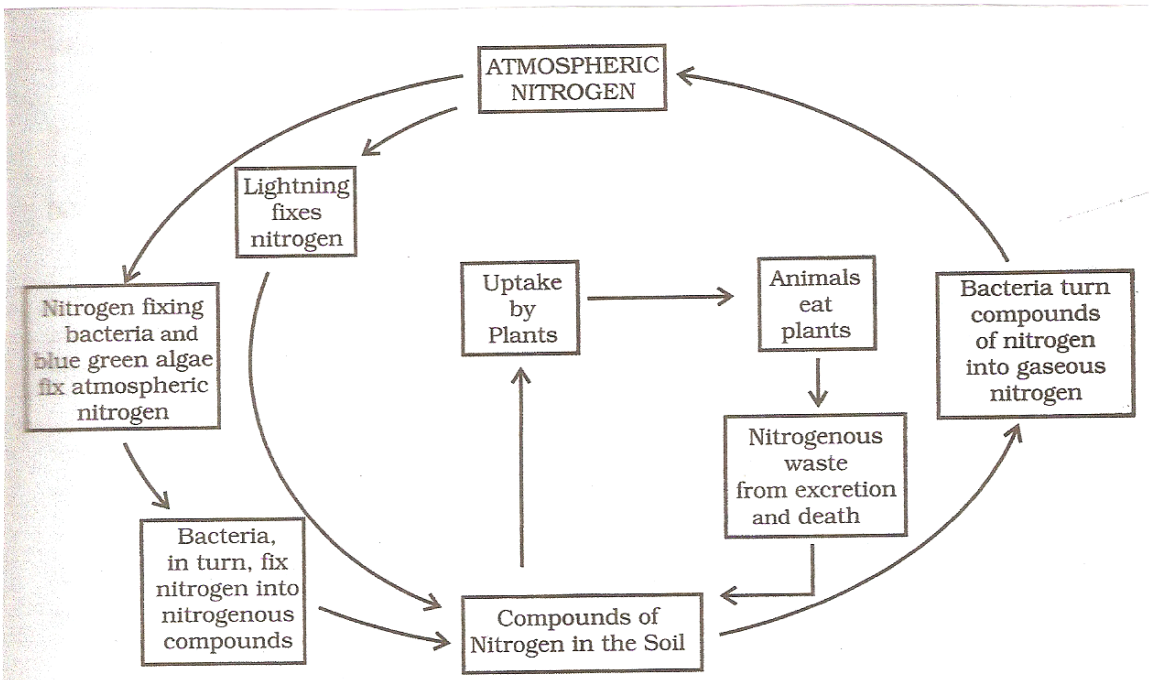


Fig. 2.10 : *Nitrogen cycle*

MICROORGANISMS: FRIEND AND FOE

Q1. Give one word answer.

- Branch of Biology which deals with the study of microorganism.
- Medicines which kill or stop the growth of these disease causing microorganisms.
- Disease causing microbes
- The process of conversion of sugar into alcohol.

Q2. Give reasons:

- Antibiotic should be taken only on the advice of a doctor.
- Milk is boiled before it is stored.
- Breads and cakes are fluffy
- Fruit juices become sour.
- Oil is added in the pickles

Q3. Fill in the blanks:

- _____ only multiply in the body of living organism.
- _____, _____, _____ and _____ are four major groups of microorganisms.

- _____ and _____ disease are caused by virus in humans.
- The full form of AIDS is_____.
- _____ and _____ are examples of antibiotics.

Q4. Name the causative organisms, their mode of transmission, and carrier of the following diseases, in a tabular form.

Tuberculosis, Measles, Typhoid, Foot and mouth disease and Dengue

Q5. Define

i) Nitrogen fixation
ii) Antibiotic
iii) Pathogens

Q6. How does nitrogen, which is a part of living organism, go back into the atmosphere?

Q7. What are the methods of preservation?

Q8.Why are the bacteria called natural scavengers?

Find Out More:

Drug Resistant TB-A result of rampant misuse of antibiotics

Swine FLU, Bird Flu

Viruses causing Cancer

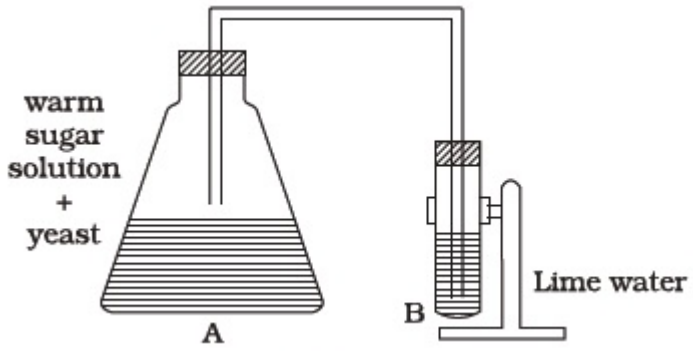
Stomach Ulcer-a bacterial Infection

VISIT THE BIOTECH LAB TO SEE BACTERIAL COLONIES GROWING ON AGAR PLATES

ROOT NODULES OF LEGUMINOUS PLANTS

Activity

Q1. Observe the set up given in the Fig below and answer the questions



a) What happens to sugar solution in A?

_____

_____

_____

b) Which gas is released in A?

_____

c) What changes will you observe in B when the gas released is passed through it?

_____

_____

_____

Q.2 Give one difference between the following pairs taking example under each category:

a. Communicable and non-communicable diseases

b. Microbe and Pathogen

c. Carrier and Vector

Q.3 Explain briefly the following:

a. Food Poisoning

b. Nitrogen Fixation

Chapter 7

Conservation of Plants and Animals

The existence of a diverse variety of plants, animals, and other living forms is known as **biodiversity** (biological diversity). Existence of plants and animals is **important** due to various reasons:

- roots of the plants help in binding the soil and hence **prevent soil erosion**
- forests are home to numerous plants and animal species,
- forests maintain a balance between the oxygen and carbon dioxide levels in the atmosphere
- forests also play role in the climate , wind and rainfall of the both locally and globally
- Different plants and animals form vital links in food chains and food webs.

Thus for the survival of the mankind and to maintain the natural ecological balance it is necessary to conserve biodiversity.

Following are the **causes of the loss of biodiversity**:

- Increase in human population and use of land for agriculture and urban development leading to large scale destruction of forests resulting in **deforestation**. Consequences of deforestation are many:
- Deforestation results in the change in soil property gradually leading to **desertification**.
- Falling of trees may also result in the increase in the temperature of the earth (**global warming**)
- It also leads a disturbance in the water cycle and less rainfall resulting in drought
- Loss of trees decrease the water holding capacity of the soil. The movement of water from the soil surface into the ground is reduced leading to floods.

ii Killing of animals for their meat, skin and other body parts

iii Pollution of air, water and land adversely affects many plants and animals.

iv Natural disasters like, earthquakes, cyclones etc.

Conserving the biodiversity on earth is the duty of every human being to promote conservation, government and non-government bodies at the international, national and local levels are constantly organizing awareness

programs, and issuing rules and regulations to protect the existing forests and wild life. To conserve biodiversity it is necessary to follow certain conservation strategies. These strategies involve establishing protected areas for plants and animals (Sanctuary, National park and biosphere reserve), restoring ecosystems, and managing already existing plant and animal species.

Terms associated with biodiversity:

Species: a group or a class of animals and plants having certain common and permanent characteristics that clearly distinguish it from other groups.

Flora and fauna: numerous species of plants living in their natural surroundings (habitat) are termed as flora, and the animal species constitute the fauna. Together the flora and fauna form the biodiversity of the place.

Extinct species: species of plants and animals that are no longer existing.

Endangered species: These are at a high risk of getting extinct in their habitat in the near future.

Endemic species: species of plants and animals which are found exclusively in a particular area. A particular type of animal or plant may be endemic to a zone, a state or a country. The following factors affect the natural habitat of endemic species and endanger their existence:

- Destruction of their habitat
- Increasing population
- Introduction of new species

An **ecosystem** is made of all the plants, animals and microorganisms in an area along with non-living components such as climate, soil, rivers etc.

To protect our flora and fauna and their habitats, **protected areas** called sanctuaries, national parks and biosphere reserves have been earmarked. Plantation, cultivation, grazing, felling trees, hunting and poaching are prohibited here. These protected areas include:

Wildlife sanctuary: provides protection and suitable living conditions to wild animals. They are a tract of land with or without lake where wild animals or fauna can take shelter without being hunted. Some of the threatened wild animals like black buck, white eyed buck, elephant, rhinoceros, etc., are protected and preserved in our wild life sanctuaries.

National parks: They are reserves of land, usually owned by governments, which are protected from most human developments. National parks are large and diverse enough to protect whole sets of ecosystem. Tiger is one of the many species which are slowly disappearing from our forests. In a food chain tigers are the top carnivores.

Biosphere reserves: they are areas meant for conservation of biodiversity. **Biodiversity** is the variety of plants, animals and microorganisms generally found in an area. The biosphere reserves help to maintain the biodiversity and culture of that area. The area covered by a biosphere reserve is the largest and it can have a number of national parks and sanctuaries within its area.

Top carnivores are those which are situated at the top of a food chain. They eat many animals but nobody eats them. The removal of a top carnivore can have a serious impact on the ecosystem. Thus, the protection of carnivores is very important. For this the **Project Tiger** was launched by the government in 1973 with the objective to ensure the survival and maintenance of the tiger population in the country.

Red data book is the source book which keeps a record of all the endangered animals and plants. It is compiled and maintained by the International Union of Conservation of Nature and Natural Resources (IUCN).

Migration is the phenomenon of movement of a species from its own habitat to some other habitat for a particular time period every year for a specific purpose like breeding. Migratory birds fly for laying eggs as the weather in their natural habitat becomes very cold and inhospitable.

We have already caused tremendous damage to our forests. If we have to retain our green wealth for future generations, plantation of more trees is the only option. **Reforestation** is restocking of the destroyed forests by planting more

trees. The planted trees should be of the same species which were found in that forest. The **Forest (Conservation) Act** in our country is aimed at preservation and conservation of natural forests and meeting the basic needs of the people living in or near the forests.

Find Out More:
Biodiversity Hot Spots

The Himalayan Glaciers

Any Case study to minimize Man Animal Conflict

Chipko Movement

Traditional systems of conservation-Sacred plants and animals

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Useful References: These are online resources that can be referred to for all the topics of grade VIII

- **http://www.britannica.com**
- **Biology 4 kids.com**
- **www.niaid.nih.gov**
- **www.microbiologyonline.org.uk**
- **www.bbc.co.uk/bitesize/ks3/science**
- **Cbse-notes.blogspot.in**
- **www.slideshare.net**

CONSERVATION OF PLANTS AND ANIMALS
(HOLIDAYS HOMEWORK)

INSTRUCTIONS:

The class will be divided into 5 **groups** of six students each by the subject teacher. The members of each group are instructed to read **Conservation of Plants and Animals, Chapter 7 from SCIENCE NCERT textbook and the handout given in the smart skills**. They will do research on the topic assigned to them by the subject teacher. They are also required to collect material like cuttings from newspaper, magazines, journals, photographs, illustrations or any relevant material from different sources to make a collage.

The Topic will be assigned to the group by the subject teacher

The students will be given one period to assemble the collage in the class when the school re-opens in July. They should be ready with the material by July 10, 2017.

Rubric For assessment:

Neatness	Relevance to Topic	Research and Information	Creativity	Adherence to time limit	Total
3	5	5	5	2	20

Chapter - 8

CELL

1. Fill in the blanks:

   a. _____ is called the living substance of the cell.

   b. The three main parts of a generalized cell are _____, _____ and _____.

   c. An example of human body cell that can change its shape is _____.

   d. _____contain pigments and occur in plant cells only.

   e. Chromosomes carry _____ that help in the transfer of characters from parents to the offspring.

   f. _____ is the unit of inheritance in living organisms.

   g. _____ is a single celled organism.

   h. _____ coined the term cell.

   i. Nucleus is separated from the cytoplasm by a membrane called_____

   j. _____ & _____ are prokaryotic.

2. Indicate whether the following statements are True (T) or False (F). If false, write the correct statement also.

   a. Plant cells have smaller vacuoles than animal cells.

   b. Organ is the basic structural unit of life.

   c. Organisms made of more than one cell are called multicellular organisms.

   d. Pseudopodia are found in *Paramecium.*

   e. The entire living substance of the cell is called cytoplasm.

   f. Tissues form organ systems.

3. a. Name the largest and the smallest cell known. Also mention their respective sizes.

b. Give examples to prove that the shape of a cell is related to its function?

c. What role do the following perform in a cell?

1. Cell wall
2. Nucleus
3. Plastids
4. Chromosomes
5. Vacuole

4 Differentiate between the following pairs:

a. Cell and Tissue

b. Prokaryotic and Eukaryotic cell

5. Draw neat and well-labelled diagrams of the following

a. Plant cell.

b. Animal cell.

6. What are genes and where are they found?

7. Look at the diagrams of the cells given below and answer the following questions:

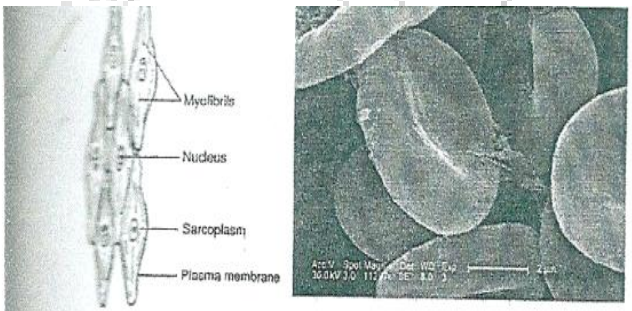

Fig. A

Fig. B

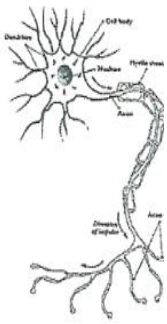

Fig. C

a. What is the shape of cells in fig. A?

b. Figure C corresponds to cell responsible for receiving and transferring messages in the human body. Name the cell.

c. Name the cells shown in figure B?

8. Classify the following terms as cell, tissue, and organ and write it in the table below

RBC, heart, hand, blood, nerve cell, WBC, blood vessel, muscle

Cell	Tissue	Organ
.....	.....	.....
.....	.....	.....
.....	.....	.....

9. Fill in the blanks with the words given below:

Nucleus, chromosomes, cell wall, cell membrane, protoplasm, cytoplasm, ribosome, cell organelles

The outermost layer of plant cells is the ___(a)___ beneath which is the ___(b)___. The term ___(c)___ refers to the jelly-like substance containing all the ___(d)___. The ___(e)___ contains thread-like structures called ___(f)___.

Word Search--Cell

Z A U V V Y N Z T E W E L A D O S I

V Z K B G U F S M H G P U A S K G D

V R J R C O I O B F R O E H M N Q R

W C E L S G S D H S S C B F U I O G

I N E S O O T Z N D U S G F I V N H

E U I L M B O D C E Y O R S L L N A

S L O O B C A R V M W R O U E N S R

M I R P O V L C G H U C W R M X L P

B H N U M E G O T A C I T I N L L Q

C Y G O L O C E N E N M H V E A J K

N I E T O R P Q G I R I T C N U A Q

N O I T U L O V E K N I S T V H V Z

Z E N E G I J Q L A Q G A M A W K N

ANIMAL BACTERIA BIOLOGIST
CELL CHROMOSOME CLONING
ECOLOGY ENERGY EVOLUTION
FOSSIL FUNGI GENE
GROWTH LIFE MICROSCOPE
NUCLEUS ORGANISM PLANT
PROTEIN VIRUS

Lab Activity

Observe the given slides. On the basis of the observations made try to identify the cells/ organism shown. Also draw a neat diagram of the cell/organism identified.

	NAME OF CELL/ORGANISM	OBSERVATIONS	DIAGRAM
SLIDE 1			
SLIDE 2			

SLIDE 3			
SLIDE 4			
SLIDE 5			

Chapter - 9

REPRODUCTION IN ANIMALS

Q.1 Match the items in Column A with items in Column B.

Column A	Column B
• Zygote	Egg cell
• *Hydra*	Birds
• Ovum	Stage when organs can be identified externally
• External fertilization	Binary fission
• Foetus	Buds
• *Amoeba*	Fusion of male and female gametes
	Fish

Q.2 Fill up the blanks:

- The type of reproduction that involves fusion of male and female gametes is called as_____.
- The testes produce male gametes called as_____
- The ovaries produce female gametes called as _____.
- Fusion of male and female gametes is called as_____.
- Sperm and ovum fuse to form _____.
- Egg laying animals are called as _____ while those which give birth to young ones are called as _____.
- Transformation of larva to an adult is called as_____ _____.
- The type of reproduction in which only one parent is involved is _____.
- *Hydra* reproduces by_____ while *Amoeba* reproduces by_____.
- _____ of sperms are produced by the testes whereas a_____ ovum is produced at a time by the ovary.
- The first animal to be cloned was a _____.
- Each sperm is a _____ cell.

Q.3 Differentiate between

- Sperm and Ovum (Two points)
- Internal and external fertilization.
- Sexual and asexual reproduction.
- Testis and ovary.

Q.4 Name the parts of the sperm.

Q.5 Give the function of jelly found around the eggs of the frog.

Q.6 Define the following:

- Metamorphosis
- Fertilization
- Embryo
- Fetus
- Viviparous animals
- Oviparous animals
- Asexual reproduction
- Zygote

Q.7 Describe the process of fertilization in frog.

Q.8 Describe the process of reproduction in a hen.

SANSKRITI

Chapter - 10

REACHING THE AGE OF ADOLESCENCE

Q.1 Fill in the blanks:

- _____is the period in the life of an individual when the body undergoes changes resulting in reproductive maturity.
- Endocrine glands are also known as _____ glands.
- _____ is the hormone which is responsible for the development of breasts in females.
- Out of _____ pairs of chromosomes in the nucleus of each human cell, two are called _____ chromosomes and are named _____ and _____.
- Hormones secreted by _____ gland stimulate testes and ovaries to produce _____ and _____ hormones respectively.
- _____ gland secretes growth hormones.
- _____ is the male hormone and _____ the female hormone.
- Hormones are secretion of _____ glands.

Q.2 Match the following:

COLUMN A	COLUMN B
Testes	Thyroxine
Adrenal	Growth Hormone
Thyroid	Testosterone
Ovaries	Insulin
Pancreas	Adrenalin
Pituitary	Oestrogen

Q.3 Name the virus responsible for AIDS.

Q.4 Name a food item which is a balanced meal in itself.

Q.5 Name the disease caused due to improper functioning of

a) Thyroid b) pancreas

Q.6 What type of foodstuffs should an adolescent take for blood formation?

Q.7 Give reasons to justify the following statements:

- The voice of adolescent boys becomes hoarse.
- Acne and pimples are more common among adolescents.
- Wall of uterus becomes thick during the first phase of menstrual cycle.
- Chips and tinned food can never replace regular meals.
- We should say "NO" to drugs.
- Adolescents should be careful of what they eat.
- Endocrine glands are called ductless glands.

Q.8 Differentiate between menopause and menarche.

Q.9 What is menstruation?

Q.10 List the secondary sexual characters that develop in boys and girls respectively at puberty.

Q.11 Name the hormone that controls metamorphosis in frogs.

Q.12 Enlist any three ways in which HIV can be transmitted from an infected to a healthy person.

Q.13 Enumerate the steps in menstrual cycle.