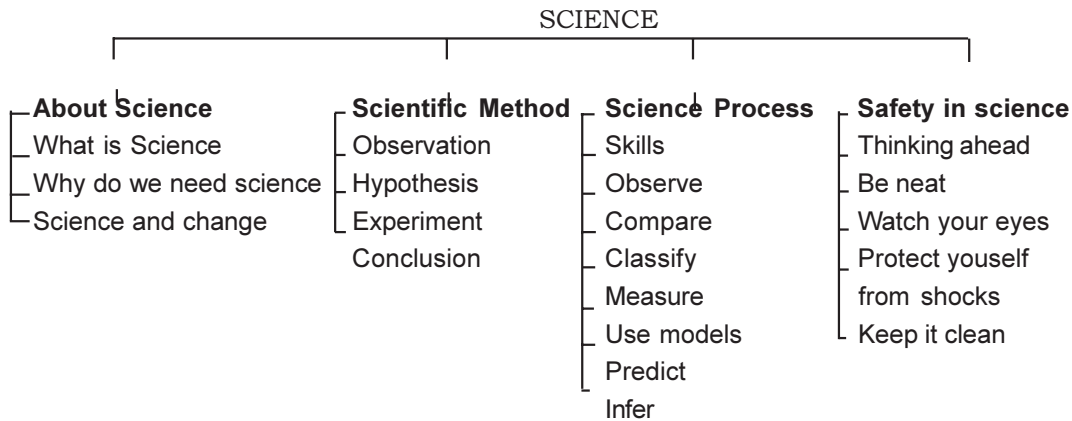


1. WHAT IS SCIENCE



- Questioning is the primary (or) fundamental step in scientific thinking.
- Science is - Conserted human effort to understand natural world with observable physical evidence.
- an organized study of knowledge
- is a tool for reaching truths of nature.
- An ecologist observes the teritorial behaviours of blue birds.
- A geologist studies the distribution of fossils and minerals in the Earthic crust.
- An astrophysicist photographes distant galaxies
- a climatologist shifting data from weather balloons.
- a chemist observes the rates of one chemical reaction at a different temperatures.
- A nuclear physicist records the resalty of anguler momentum of a particular particle in the circular path.
- The word science comes from the latin word "Scientia".
- Scientia' means knowledge.
- Geneticists trying to understand how certain characters are passed from genera-tion to generation.
- Biologists tracing the pathways by which diseases are transmitted are clearly seeking information to improve the lives of ordinary people.
- "Science is a history of corrected Mistakes" ____ Karl Popper.
- "That fellow Einstein..... every year retracts what he wrote the year before." - Albert Einstein.
- The way that scientists follow for their innovations is called 'Scientific method'.

Scientific method steps :

1. Observe and Ask Questions
2. Form a Hypothesis
 - A Hypothesis is a possible answer that can be tested.
3. Plan an Experiment

- ```

graph TD
 Variables --> Fixed_variables[Fixed variables]
 Variables --> Changing_variables[changing variables]

```

1. The statement "Science is a history of corrected mistakes" was given by : ( )  
A) Karl Poper  
B) Albort Einstein  
C) Coperbicus  
D) Neaton
2. 'Scientia' means ( )  
A) Awareness  
B) Knowledge  
C) To know  
D) Learning
3. Endemic animal of Australia is ( )  
A) Platypus  
B) Echidna  
C) Kangaroo  
D) Kiwi
4. The Person who observes the rate of chemical reaction is ..... ( )  
A) Microbiologist  
B) Physicist  
C) Chemist  
D) Biologist
5. The word 'Science' is derived from ( )  
A) Greek  
B) Italic  
C) Latin  
D) English
6. Making a statement about an expected outcome is called ( )  
A) Prediction  
B) Inference  
C) Hypothesize  
D) Planning
7. Which of the following is an organised study of knowledge ? ( )  
A) Mathematics  
B) Social Science  
C) Science  
D) None of these
8. Forests that grow near seashores are called ( )  
A) Mangrove  
B) Medicinal Plants  
C) Orchids  
D) Blue grean algae
9. A Geologists studies the ( )  
A) Distribution of fossils and minerals in the earth's crest  
B) Weather Patterm  
C) Rate of a chemical reaction  
D) Galaxy
10. The book, 'History of Science' was written by : ( )  
A) Copernicas  
B) Newton  
C) F. Cojori  
D) Robert Hook

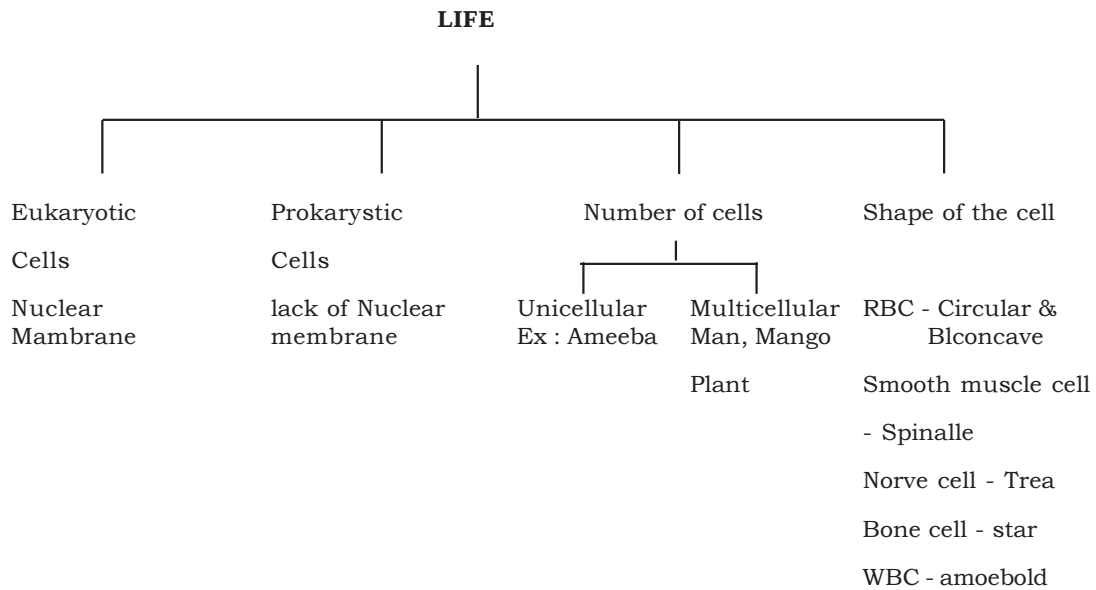
11. There are over \_\_\_\_ organisms living on our earth ( )  
A) 1000 B) 10,000 C) 1,00,000 D) 10
12. The Average rainfall of desert is less than thus ( )  
A) 30 B) 40 C) 23 D) 29
13. An ecologist deals with ( )  
a) Photographing galaxies B) Distribution of fossils  
C) Observation of the territorial behaviour of blue birds D) All the above
14. Which of the following is used to measure liquids in laboratory ? ( )  
A) Buret B) Measuring cylinder  
C) Thermometer D) Both A and B
15. The study of Birds is called : ( )  
A) Botany B) Anatomy C) Ornithology D) Physiology
16. \_\_\_\_\_ is the primary step in scientific thinking. ( )  
A) Answering B) Questioning C) Laughing D) Talking
17. 'Beans seeds germinate very well in the garden soil'. To which of the following step of scientific method it belongs ? ( )  
A) Experiment B) Observation C) Conclusion D) Hypothesis
18. Which of the following scientific method is used when we observe the length of plants ? ( )  
A) Confirmation B) Experimentation  
C) Hypothesis D) Solving the Problems
19. Science is a tool for searching ( )  
A) Truths of nature B) Amazing to think  
C) Many problems D) History of nature
20. Which of the following process still affects the outcome of an Experiment and acts as a controlling factor ? ( )  
A) Defining B) Interpretation C) Control variable D) All of the above
21. Which Process still is used to group or organise objects into categories based on their specific characteristics ? ( )  
A) Classification B) Comparison C) Observation D) Planning
22. Science is an Organised study of knowledge which is based on ( )  
A) Controlled Conditions B) Phenomena  
C) Experimentation D) Observation
23. Who tries to understand how certain conditions are passed from one generation to another generation ? ( )  
A) Biologist B) Geologist C) Geneticist D) Ecologist
24. The good ways to display data so that it can be interpreted by others ? ( )  
A) Charts B) Tables C) Graph D) All

25. Heliocentric theory was proposed by ( )  
 A) Robert clins      B) F. Cojori      C) Copernicus      D) Albert Einstein
26. Marigold seeds sprout best in a combination of which soil ? ( )  
 A) Red, clay and Black soil      B) Clay, sandy, pottius soil  
 C) Black, sandy and potting soil      D) In all soils
27. Match the following : ( )
- |               |     |                            |
|---------------|-----|----------------------------|
| 1. Measure    | ( ) | A) Never eat               |
| 2. Hypothesis | ( ) | B) If anything get damaged |
| 3. Oops       | ( ) | C) Plug out an outlet      |
| 4. Protection | ( ) | C) Plug out an outlet      |
| 5. Yuck       | ( ) | E) Make a statement        |
28. Match the following : ( )
- |                      |     |                                             |
|----------------------|-----|---------------------------------------------|
| 1. A Biologist       | ( ) | A) Records the results of Angular momentum  |
| 2. A chemist         | ( ) | B) Distribution of fossils                  |
| 3. An ecologist      | ( ) | C) Observes the reaction of tissue          |
| 4. An Astrophysicist | ( ) | D) Observes the territorial behaviours      |
|                      |     | E) Observes the rates of achemical reaction |
|                      |     | F) Photographs distant galaxies             |
29. Match the following : ( )
- |                                        |     |                              |
|----------------------------------------|-----|------------------------------|
| 1. Fuse wire may be cut off            | ( ) | A) Classification            |
| 2. Observing the filament              | ( ) | B) Experimentation           |
| 3. Books, blades, wires                | ( ) | C) Making hypothesis         |
| 4. Bulb is not glowing due to fuse off | ( ) | D) Collection of information |
| 5. Bulb is not glowing in the room(    | )   | F) Inference                 |

### **KEY FOR WHAT IS SCIENCE**

- |       |                                           |       |       |       |
|-------|-------------------------------------------|-------|-------|-------|
| 1) A  | 2) B                                      | 3) C  | 4) C  | 5) C  |
| 6) C  | 7) C                                      | 8) A  | 9) A  | 10) A |
| 11) C | 12) C                                     | 13) D | 14) C | 15) B |
| 16) B | 17) D                                     | 18) B | 19) A | 20) C |
| 21) A | 22) C                                     | 23) C | 24) D | 25) C |
| 26) A | 27) D,E,B,C,A 28) C,E,D,F,A 29) C,A,D,F,E |       |       |       |

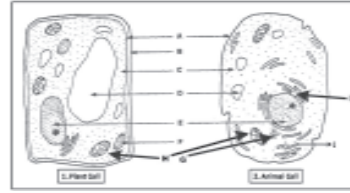
## 2. CELL BASIC UNIT OF LIFE



- A.V. Leeuwenhoek was the first person to observed Micro organisms
- A.V. Leeuwenhoek observed Microorganisms in 1674.
- Bacteria, yeast, Protozoans RBC, Observed by A.V. Leeuwenhoek.
- In 1665 Robert Hooke observed thin slices of cork (oak tree) under simple microscope which he had made.
- Robert Hooke called the very small cavities of oak cark as 'Cell'.
- Cell is a latin word.
- Cell means a 'little room'.
- Felice Fontana first saw the Nucleus in the epithelial cells
- Robert Brown observed the necleus in different kinds of cells.
- Robert Brown recognized first that the nucleus as the integral part of all cells.
- Robert Brown named the integral part of all cells as 'Nucleus' (1831).
- 'Stomata' in the leaves can helps in exchange of gases.
- Stains that helps to observe the necleus are saffranine, methylene blue, (or) Red ink.
- After staining Nucleus gets 'blue' colour under microscope.
- The outer most layer of Animal cells (cheak cells, Nerve Cell, RBC etc is cell. Membrane (or) Plasma Membrane.
- Cell wall gives rigidity to the cell.
- Cell wall gives the strength to the tree for lifetime growth.
- PM is selectively permeable (allows only some substances)
- Nucleus in animal cells is almost at centre.

- Nucleus in plants cells is not at centre.

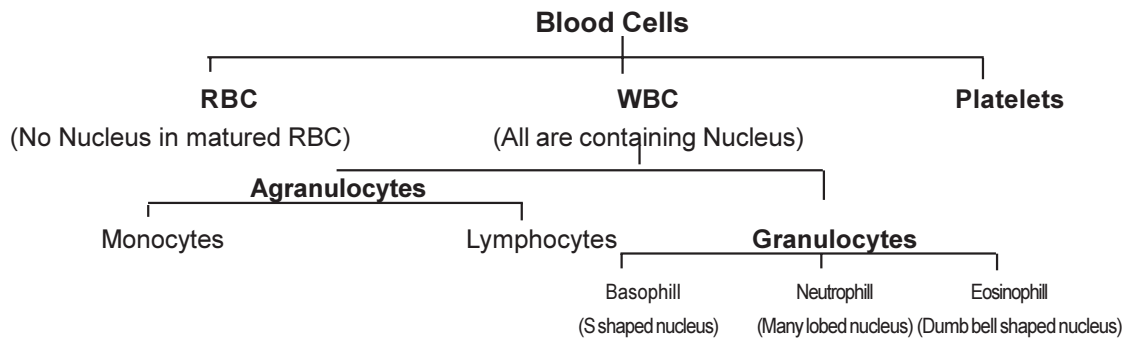
- Plasma membrane
- Cell wall
- Cytoplasm
- Nucleus



- Jelly like substance between the nucleus and the cell membrane is cytoplasm
- Cytoplasm is heterogeneous material.
- Cells are the structural and functional units of the living body.
- Organisms which contains only one cell as a whole body are called 'single celled' (or) UNICELLULAR Organisms

Ex : Amoeba, Paramecium, Chlamydomonas (all Protozoans)

- In unicellular organisms, single cell can performs all the life processes like food intake, respiration, excretion growth and Reproduction.
- Epidermal tissue gives shape to the stem.
  - " " is outer most layer of stem.
  - " " gives protection.
- Cortex of green stem contains chloroplasts and performs photosynthesis.
- Vascular tissue helps in material transport and xylem tissue - water minerals  
Phloem tissue - food.
- Pith is absent in mature stem  
Pith is present in young stem only.
- The shape of Amoeba is irregular
- Amoeba, keeps on changing its shape varying protruding out of its body are called pseudopodia  
(Pseudo = false, Podia = feet)
- The size of Bacteria is 0.1 to 0.5 micrometers.
- Human liver and kidney cells = 20 to 30 micrometers.
- Human nerve cell = 90 to 100 cm.
- The largest cell is egg of ostrich. 17 cm x 18 cm.
- The size of the organisms is depends on the number of cells but not on the size of the cells.
- Glycerin saves the material from drying (dehydration).
- Staining helps to high light particular areas in the cell.
- 1 meter = 100 cm
- 1 cm = 10 mm
- 1 mm = 1000 um
- 1 um = 1000 nm



### **BITS**

1. The first Microscope was invented around \_\_\_\_ years ago ( )  
 A) 250                      B) 300                      C) 350                      D) 275
2. After staining the nucleus in onion peels appear as ( )  
 A) Blue spot              B) Red spot              C) Green spot              D) None of these
3. Outer covering in onion cells is more clear than in cheek cell due to the presence of ( )  
 A) Nucleus                      B) Cell Membrane              C) Cell wall              D) Nuclear membrane
4. Which of the following saves the material from dehydration (drying) ? ( )  
 A) Water                      B) Glycerine              C) Safranin              D) Red ink
5. Which of the following is an unicellular organism ( )  
 A) Hydra                      B) Euglena                      C) Tapeworm              D) Man
6. Pick the odd one out ( )  
 A) Iodine                      B) Safranin                      C) Glycerine                      D) Janus green B
7. Which of the following cell organelle helps to carryout several functions within the cell ? ( )  
 A) Lysosome                      B) Nucleus                      C) Ribosome                      D) Mitochondrion
8. The Microscope used by Robert Hook was ( )  
 A) Compound Microscope                      B) Simple Microscope  
 C) Light Microscope                      D) Both B and C
9. In which of the following we can see different types of cells ? ( )  
 A) Stem of spinach                      B) Stem of Tridax  
 C) Stem of Gaddi chamanthi                      D) All the above
10. Match the following ( )
 

|                       |     |                  |
|-----------------------|-----|------------------|
| i) Smallest cell      | ( ) | A) 90-100 cm     |
| ii) Human liver cell  | ( ) | B) 17 cm x 18 cm |
| iii) Human nerve cell | ( ) | C) 1000 nm       |
| iv) Egg of an ostrich | ( ) | D) 20-30 cm      |
| v) 1 Micrometer       | ( ) | E) 0.1 to 0.5 cm |

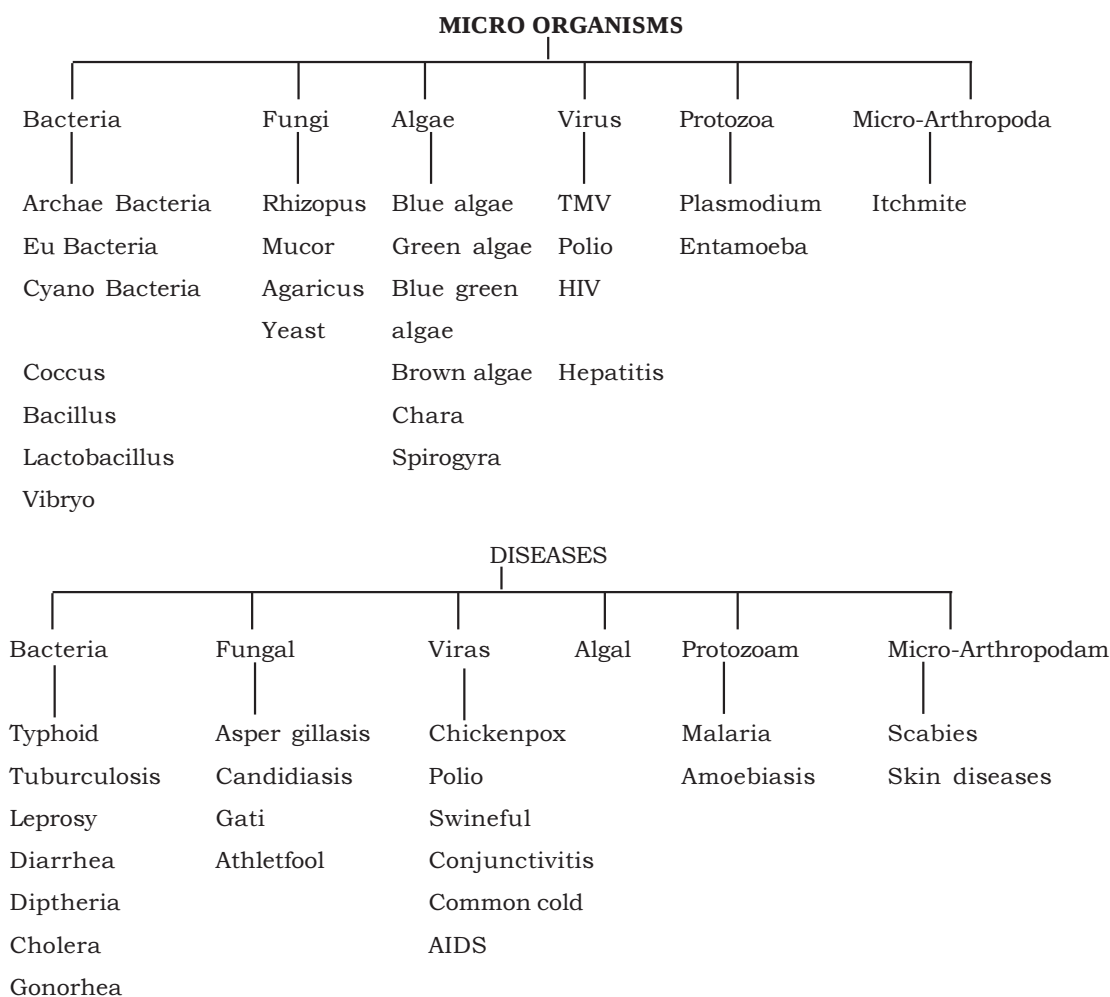
11. Cell is a latin word which means ( )  
A) Dark Room      B) Honey comb    C) Little room      D) Bright room
12. The pores through which the leaves exchange the gases called ( )  
A) Stomata          B) Lenticells      C) Leaf holes      D) Cuticle
13. The largest cell is ( )  
A) A bone cell      B) An ostrich eggC) Eagle egg      D) Nerve cell
14. The scientists who observed nucleus in different kinds of cells was ( )  
A) Robert Brown                      B) Leuwenhoek  
C) Athanasics kirder                  D) Jan swammerdan
15. The Boundary of a cell is the..... ( )  
A) Cytoplasm          B) Vacuoles      C) Nucleus          D) Cell Membrane
16. The Boundary of a plant cell is..... ( )  
A) Plasma membrane                  B) Cytoplasm  
C) Cell wall                              D) Chloroplast
17. Pick the odd out ( )  
A) Plasma membrane                  B) Cytoplasm  
C) Nucleus                              D) Cell wall
18. Pick the odd one out ( )  
A) Monocyte          B) Lynphocyte    C) Neutrophil      D) Nerve cell
19. Pick the odd one out ( )  
A) Basophil          B) Neutrophil    C) Eosimphil      D) Monocyte
20. Pick the odd one out ( )  
A) Basophil          B) Neutrophile    C) Monocyte      D) Red blood cell
21. \_\_\_\_ is the basic structural unit of an organism ( )  
A) Cell wall          B) Cell              C) Ribosome      D) Shell
22. Robert Hooke obscrued cells in the cork of.....tree ( )  
A) Neam              B) Oak              C) Mango          D) All the above
23. ....gives rigidity to the onion cell ( )  
A) Cell manbrane    B) Cell wall      C) Cytoplasm      D) Neculeus
24. Outermost layer of the stem gives..... ( )  
A) Protection      B) Conduction    C) Nutrition      D) All above
25. The first compound microscope was made in the year 1595 by..... ( )  
A) Robert Brown    B) Hooke          C) Janssen        D) John
26. Nucleus Obscrued first by ..... ( )  
A) A.V. Lecuwenhock                  B) Robert Brown  
C) Athanasices Kircher                D) Felice Fontana

27. Nucleus first observed in..... cells ( )  
 A) Onion Pcel cells B) Epithelial cells C) Bacteria D) RBC
28. Cells were first observed by Robert Hook in \_\_\_\_ ( )  
 A) 1674 B) 1665 C) 1695 D) 1660
29. Pick the odd one out ( )  
 A) Slide B) Coverslip C) Pipetle D) Watchgless
30. \_\_\_\_\_is the reason for the irregular shape of Amoeba  
 A) Cytoplasm B) Plasmamombrane  
 C) Pseudopodia D) All the above

### **KEY FOR CELL BASIC UNIT OF LIFE**

- |       |       |       |       |                   |
|-------|-------|-------|-------|-------------------|
| 1) C  | 2)A   | 3) C  | 4) B  | 5)B               |
| 6) C  | 7) B  | 8) B  | 9) D  | 10) E, D, B, C, A |
| 11) C | 12)A  | 13)B  | 14)A  | 15) D             |
| 16) C | 17) D | 18) D | 19) D | 20)D              |
| 21)B  | 22) B | 23)B  | 24)A  | 25) C             |
| 26)D  | 27) B | 28) B | 29) C | 30) C             |

### 3.1. MICROBIAL WORLD -1



#### **SYNOPSIS / KEY CONCEPTS**

- In the year 1674 Microbiology evolved as a science.
- Micro biology deals with study of micro signism & Micro organisms can be seen only under microscope only.
- A.V. Leuwenhock observed micro organisms with the help of micro schope for the first time in the year 1674.
- Micro organisms present in our digestive system help in digesting food.
- Heide : N. Schuls discovered biggest bacteria - Thiomargarita nambiens.
- Longest bacteria is Epulopiscium fishe /soni.
- Smallest bacteria is Mycoplasma genitalium.
- 50% of atmosphenic oxygen is produced by micro alage.
- Micro arthropods increase soil fertility.

- Micro arthropods are also called as jointed legged animals.
- The soil is a home for many micro organisms.
- Virus become in active when they are outside of living cells.
- Viruses can be seen only under powerful electron microscope only.
- Viruses act like linking between living and non - living.
- Verus reproduce only when they are in living cells.

### III. PREVIOUSLY ASKED BITS

1. Match the following. ( )

#### Group - I

- A) Virus
- B) Bacteria
- C) Fungi
- D) Prtozoan

#### Group - II

- i) Skin diseases
- ii) Malaria
- iii) AIDS
- iv) Typhoid

- 1. a-iii, b-iv, c-i, d-ii
- 2. a-ii, b-iii, c-i, d-iv
- 3. a-i, b-iv, c-ii, d-iii
- 4. a-iv, b-ii, c-iii, d-i

2. Match the following and identify the correct one. ( )

#### Group - I

- A) Bacteria
- B) Fungi
- C) Algae
- D) Protozoa

#### Group - II

- i) Bread mould rhizopus
- ii) Amoeba
- iii) Lactobacillus
- iv) Chalmydomonas

- 1. a-iii, b-iv, c-i, d-ii
- 2. a-iii, b-ii, c-iv, d-i
- 3. a-ii, b-i, c-iv, d-iii
- 4. a-iii, b-i, c-iv, d-ii

3. Name the bacteria that can be seen with our maked eye. ( )

- 1. Thio margarita namibiensis
- 2. Bacillus thruingerusis
- 3. Entamoeba coli
- 4. Stephalo cocus

4. Animalcules are \_\_\_\_\_ ( )

- A) Algac
- B) Fungi
- C) Bacteria
- D) Virus

5. Micro organisms are classified basically into how many types. ( )

- A) 1
- B) 2
- C) c
- D) 4

6. Match the following ( )

#### Group - I

- 1) 500 microns
- 2) 0.25 mm
- 3) 0.75 mm
- 4) 600 um

#### Group - II

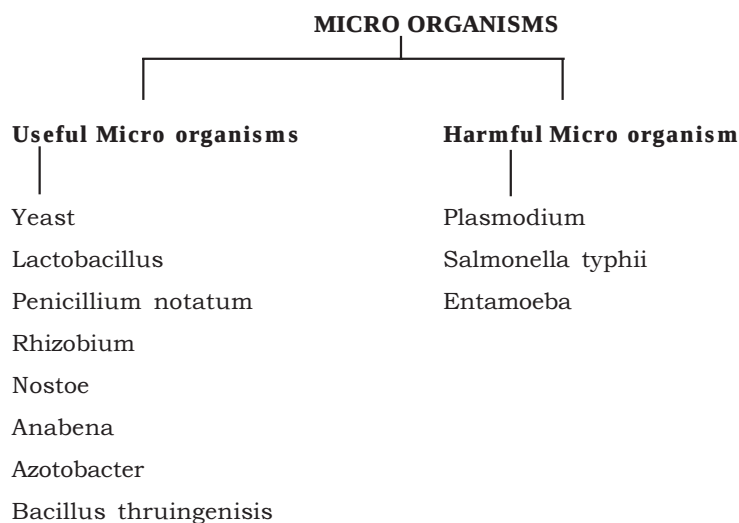
- a) namibiensis
- b) Amoeba
- c) epulopiscium
- d) Paramoecium

1. 1-b, 2-d, 3-a, 4-c                      2. 1-b, 2-a, 3-c, 4-d  
3. 1-d, 2-c, 3-a, 4-d                      4. 1-a, 2-b, 3-a, 4-d  
4. Cyclopes : Protozoa ; ; oedogonium ; \_\_\_\_\_ (     )  
1) Bacteria                      2) Virus                      3) Fungi                      4) Alac

**KEY FOR MICROBIAL WORLD -1**

- 1) 1                      2) 4                      3) 1                      4) 3                      5) 4  
6) 1                      7) 4

### 3.2 STORY OF MICRO ORGANISMS - 2



| Sl. No | Name of the disease   | Causative microorganism | Mode of Transmission                      | Preventive Measures                    |
|--------|-----------------------|-------------------------|-------------------------------------------|----------------------------------------|
| 1.     | Tuberculosis          | Bacteria                | Air                                       | B.C.G. Vaccene                         |
| 2.     | Chicken Pox           | Virus                   | Air                                       | Varisella vaccine                      |
| 3.     | Measles, Mumps        | Virus                   | Air                                       | MMR Vaccination                        |
| 4.     | Polio                 | Virus                   | Air, water                                | Vaccination - Polio drops              |
| 5.     | Swine flu             | Virus                   | Air                                       | Vaccination                            |
| 6.     | Cholera, Typhoid      | Bacteria                | Contaminated air, water, food<br>Housefly | Personal hygiene Boiled drinking water |
| 7.     | Malaria               | Plasmodium              | Mosquitoes                                | Mosquito nets                          |
| 8.     | Dengue                | Virus                   | Mosquitoes                                | " "                                    |
| 9.     | Chikungunya           | Virus                   | "                                         | " "                                    |
| 10.    | Japanese Encephalitis | Virus                   | Mosquitoes                                | " "                                    |

#### PLANT DISEASES CAUSED BY MICRO ORGANISMS

| S.No. | Name of the plant Disease  | Causative Micro organism | Mode of Trasmission |
|-------|----------------------------|--------------------------|---------------------|
| 1.    | Citrus Canker              | Bacteria                 | Air                 |
| 2.    | Red rot of sugarcane       | Fungi                    | Air, seedlings      |
| 3.    | Tikka disease of Groundnut | Fungi                    | Air, Seeds          |
| 4.    | Tobacco mosaic             | Virus                    | Insects             |
| 5.    | Smurt disease of Rice      | Fungus                   | Air                 |

#### 4. Years - Inventions

1. 1796-o small pox
2. 1929-Penicillin
3. 1952-Polio vaccine
4. 1957-Polio drops

#### **Synopsis / Key Concepts**

- Micro organisms present every where such as in soil, water, air, in the bodies of animals and plants.
- Yeast is added to dough while making bread in bakery.
- Fermentation produces CO<sub>2</sub>.
- Wine, Beer, Alcohol and Acetic acid are manufactured by using fermentation method.
- Chemicals used for killing bacteria are called as Antibiotics.
- Alexander Fleming discovered penicillin in the year 1929.
- Dr. Y. Subba Rao discovered an antibiotic Aureomycin also known as Tetracycline.
- Dr. Jonas Salk discovered vaccine for polio.
- Dr. Albert Sabin discovered polio drops in 1957.
- Antibodies fight against pathogens.
- Administering dead or live pathogens into our body is known as vaccination.
- In 1799 Dr. Edward Jenner discovered vaccine for measles.
- The term 'Vaccine' is derived from a Latin word 'Vaca' means 'cow'.
- The percentage of Nitrogen is in the atmospheric air.
- 'Rhizobium' bacteria present in root nodules of groundnut.
- Bacillus thuringiensis is called as bio pesticide.
- Diseases that transmit from person to person are called communicable diseases.
- Organisms that carry disease causing organisms are called as "Vectors".
- "Clostridium botulinum" bacteria causes food poisoning, which is called as 'Botulism'.
- 'Germ Theory' is proposed by Louis Pasteur.
- Milk can be stored for long time by pasteurisation method.

#### **BITS**

1. 'Tikka' disease occurs in \_\_\_\_\_ ( )
- A) Lemon                      B) Groundnut      C) Tobacco                      4) Paddy

2. Match the following correctly.

| <b>Group - I</b> | <b>Group - II</b>              |
|------------------|--------------------------------|
| A) T.B.          | i) Contaminated food and water |
| B) Polio         | ii) Through Air                |
| C) Malaria       | iii) Air, Water                |
| D) Hepatitis     | iv) Mosquitoes                 |

1. A-i, B-iii, C-ii, D-iv                      2. A-i, B-iii, C-iV, D-i  
3. A-iv, B-i, C-ii, D-iii                    4. A-iii, B-ii,C-i, D-iv

3. Discovery of pasteurisation lead to \_\_\_\_\_

1) Transperation     2) Inoculation     3) Vaccination     5) Sterilization

4. Dengue is transmitted by \_\_\_\_\_ (2017)

1) Female culex     2) Ades     3) Female     4) Male culex

5. Which of the following is not correct rugarding vaccenation\_\_\_\_\_

1) Dr. Edward Jenner discovered Vaccination  
2) Vacceines protect from fatal diseases  
3) Dr. Y. Subba Rao discovered a vaccine for 'Rabies'.  
4) Vaccine protected people from decadly disease Meals

6. Which of the following is not spread b \_\_\_\_

1) Typhoid                  2) SwineFlu     3) T.B.                  4) Mumps

7. \_\_\_\_\_ discovered vaccine for Rabies \_\_\_\_

1) Alexander Flemming                      2) Louis pasteur  
3) Edward Jenner                              4) Jonas salks

8. Plasmodium causes \_\_\_\_\_

1) Malaria                  2) Diarrhea     3) AIDS                  4) Botulism

9. Vaccine for Measles discovered by \_\_\_\_

1) Edward Jenner                              2) Louis Pasteur  
3) Yellapragada Subba Rao                  4) Alexander Flemming

10. Which of the following is a S.T.D. \_\_\_\_\_

1) Gonorhea                  2) Cholera     3) Measles                  4) Tuberculosis

11. B.C.G. is used to present \_\_\_\_\_

1) Measles                  2) T.B.                  3) AIDS                  4) Flu

12. Find the odd man out \_\_\_\_\_

1) Dengue, chicken guniya, Hepatitis 2) Cetrus canker, Tikka, Smut  
3) Meals, Small pox, polio, Diphtheria 4) None of the above

13. Diarrhea : Bacteria :: Malaria : \_\_\_\_\_

1) Virus                      2) Protozoa     3) Bacteria                  4) Housefly

14. Which of the following statement is correct ? ( )

i) Jonal ssalk discovered polio drops in 1952

ii) Dr. Y. Subba Rao discovered Auromycin

1) i-true, ii-false    2) i and ii false    3) i-false, ii-true    4) i and ii True

15. Match the following ( )

**Group - I**

**Group - II**

1) Cattle

A) Anthrox

2) Sheep

B) Foot and mouth disease

3) Anopheles Mosquitoe

C) Malaria

4) Rezobium

D) Nitrogen fixation

1. 1-A, 2-B, 3-C, 4-D

2. 1-B, 2-A, 3-D, 4-C

3. 1-B, 2-A, 3-C, 4-D

4. 1-D, 2-C, 3-B, 4-A

16. Find the correct one from the below. ( )

a) B.C.G. - T.B

b) O.P.V. - Polio

c) P.C.V. - Pneumonia

d) M.M.R. - Rubella.

1) a,b,c only    2) a and d only    3) a, b, c and d    4) only d.

**KEY FOR STORY OF MICRO ORGANISMS - 2**

1) 2

2) 2

3) 4

4) 2

5) 3

6) 2

7) 2

8) 1

9) 1

10) 1

11) 1

12) 2

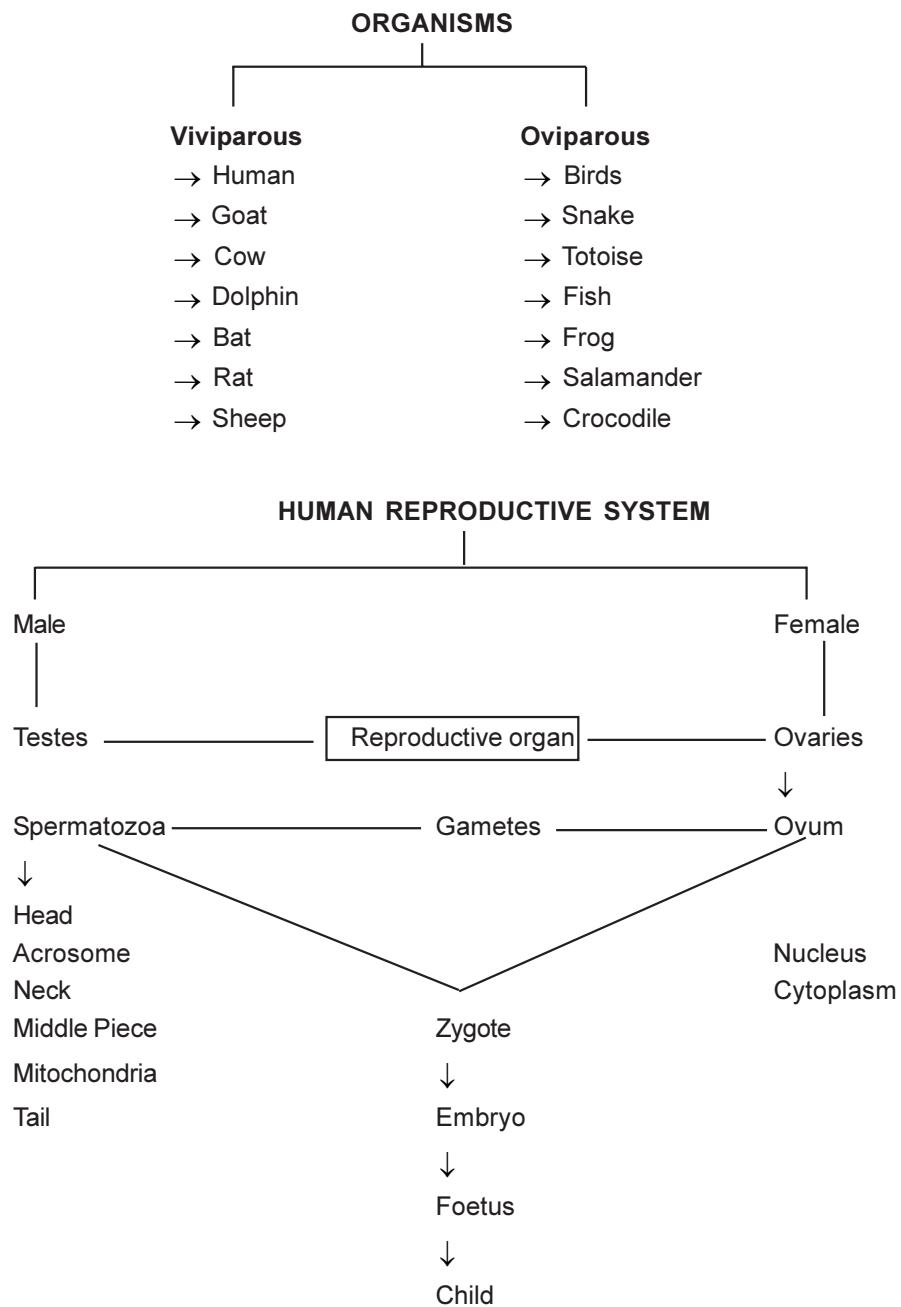
13) 2

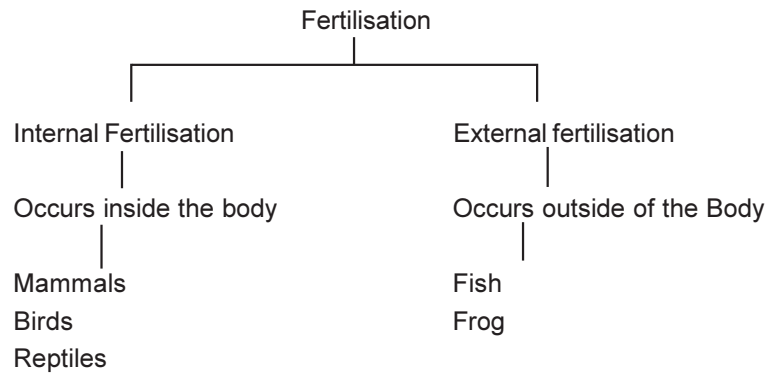
14) 3

15) 3

16) 3

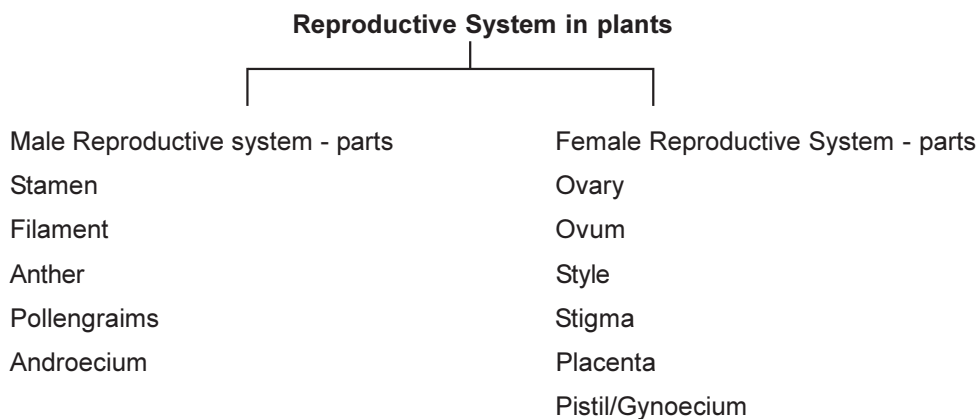
## 4. REPRODUCTION IN ANIMALS





## MODES OF ASEXUAL REPRODUCTION

- Budding - Hydra, Yeast
- Binary Fission - Amoeba, Bacteria, paramoecium, Euglena
- Multiple Fission - Amoeba



## II. SYNOPSIS / KEY CONCEPTS

- Reproduction is the most important life process.
- The process of giving birth to a similar organism by an organism is called 'Reproduction'.
- There are two types in Reproduction. They are 1. Sexual and 2. Asexual.
- The reproduction occurs by formation and fusion of gametes is called sexual reproduction.
- Reproduction without formation and fusion of gametes is called Asexual reproduction, usually occurs in micro - organism.

- Budding in Hydra and Binary Fission in Amoeba are Asexual modes of reproduction.
- Fusion of male and Female gametes is known as Fertilisation.
- Fertilisation that occur outside the female body is called External fertilisation while that occur inside the body is called Internal fertilisation.
- Newly born organisms do not be similar like their parents at the time of birth in case of oviparous, but resemble their parents after metamorphosis.
- Development of Tadpole larva into adult frog is called "Metamorphosis".
- Earth worm contains both male and female reproductive systems hence called "Hermaphrodite".
- Cloning is the Production of an exact copy of a cell, any other living part, or a complete organism.
- Dolly a sheep was born on 5<sup>th</sup> July 1996 and was the first mammal to be cloned by Ian Wilmut.

### **BITS**

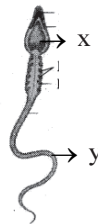
1. Fertilisation in humans occurs in \_\_\_\_\_ ( )  
 1) Uterus                      2) Ovary                      3) Fallopian tube 4) Cervix
2. Identify the wrong one \_\_\_\_ (2017)  
 1) Hydra - Binary Fission                      2) Human - Internal fertilisation  
 3) Fish - External fertilisation                      4) Birds - Internal fertilisation
3. External ears, hair of the body are the characteristics of these animals. ( )  
 1) Oviparous animals                      2) Nocturnal animals  
 3) Viviparous animals                      4) Terrestrial animals
4. These methods are the artificial methods. (2016) ( )  
 A) In VITRO fertilisation                      2) IVF  
 3) Ovulation method                      4) Viviparous methods
5. Find the incorrect one from the following. ( )  
 1) Hydra - Budding                      2) Amoeba - Binary fission  
 3) Human - External fertilisation                      4) Dolly - cloning
6. Zygote is formed in \_\_\_\_ ( )  
 1) Asexual Reproduction                      2) Vegetative Reproduction  
 3) Sexual Reproduction                      4) Reproduction through Spores
7. External fertilisation occurs in \_\_\_\_ ( )  
 a) Frogs                      b) Humans                      c) Birds                      d) Fish  
 1) a and b                      2) a and c                      3) a and d                      4) b and d
8. Which of the following pair is incorrect ? ( )  
 1) Amoeba - Binary Fission                      2) Yeast - Multiple Fission  
 3) Hydra - Budding                      4) Paramecium - Binary Fission

9. Which of the following is in Diploid condition - 2014. ( )  
 1) Spermatozoa      2) Pollengrain      3) Ovum      4) Zygote
10. External ears, hair on skin are the characteristics of these \_\_\_\_ ( )  
 1) Oviparous animals      2) Viviparous animals  
 3) Bisexual animals      4) Terrestrial animals
11. Tail of a spermatozoan helps in \_\_\_\_ ( )  
 1) Storing genetic information      2) Production of Energy  
 3) Movement      4) To penetrate into ovum (Fertilisation)
12. Find the odd man out ( )  
 a) cow, camel      b) Elephant, buffalo  
 c) Rat, Crow      d) Duck, Frog  
 1) a and b      2) a, b and c      3) only c      4) only d
13. Cow : mammal :: Frog : \_\_\_\_ ( )  
 a) oviparous      b) viviparous      c) Amphibian      d) Mammal  
 1) a and b      2) only 'a'      3) a and c      4) a and d
14. Match the following..... ( )

**Part - I**

**Part - II**

- |                       |                          |
|-----------------------|--------------------------|
| 1. Heart              | a) 10 <sup>th</sup> week |
| 2. Bones              | b) 2 <sup>nd</sup> week  |
| 3. Fore limbs         | c) 4 <sup>th</sup> week  |
| 4. Hind limbs         | d) 9 <sup>th</sup> week  |
| 1) 1-a, 2-b, 3-c, 4-d | 2) 1-b, 2-c, 3-a, 4-d    |
| 3) 1-b, 2-c, 3-d, 4-a | 4) 1-a, 2-c, 3-d, 4-b    |
15. Asexual reproduction is not seen in \_\_\_\_ ( )  
 1) Paramoecium      2) Amoeba      3) Hydra      4) Earthworm
16. 'Tadpole' is the larva of \_\_\_\_  
 1) Frog      2) Fish      3) Cockroach      4) Earth worm
17. Embryo that fully developed is called \_\_\_\_  
 1) Ovum      2) Ovary      3) Foetus      4) Child
18. The first cloned animal is \_\_\_\_  
 1) Rat      2) Sheep      3) Rabbit      4) Human
19. Label the parts shown \_\_\_\_ ( )  
 1) x-Head, y-Tail  
 2) x-Tail, y-Head  
 3) x-Nucleus, y-Middlepiece  
 4) x-Nucleus, y-Tail



20. Sperm + ---- → Zygote ( )  
 1) Gamet                      2) Ovum                      3) Foetus                      4) None of the above
21. No. of Fallopian tubules in Female reproductive system of Human is ( )  
 1) 4                                      2) 3                                      3) 2                                      4) 1
22. Dolly was cloned in the year \_\_\_\_ ( )  
 1) 8<sup>th</sup> July, 1996                      2) July 5, 1995                      3) 8<sup>th</sup> July, 1995                      4) 5<sup>th</sup> July, 1996
23. External fertilisation occurs in \_\_\_\_ ( )  
 1) Lizard                      2) Human                      3) Frog                      4) All the above
24. Tests : Sperm : : \_\_\_\_\_ : ovum ( )  
 1) Female gametes                      2) Female zygote                      3) Ovary                      4) Zygote

25. Identify the mode of reproduction that is pictured above ( )  
 1) Asexual Reproduction ( )  
 2) Budding  
 3) Binary Fission  
 4) Multiple Fission

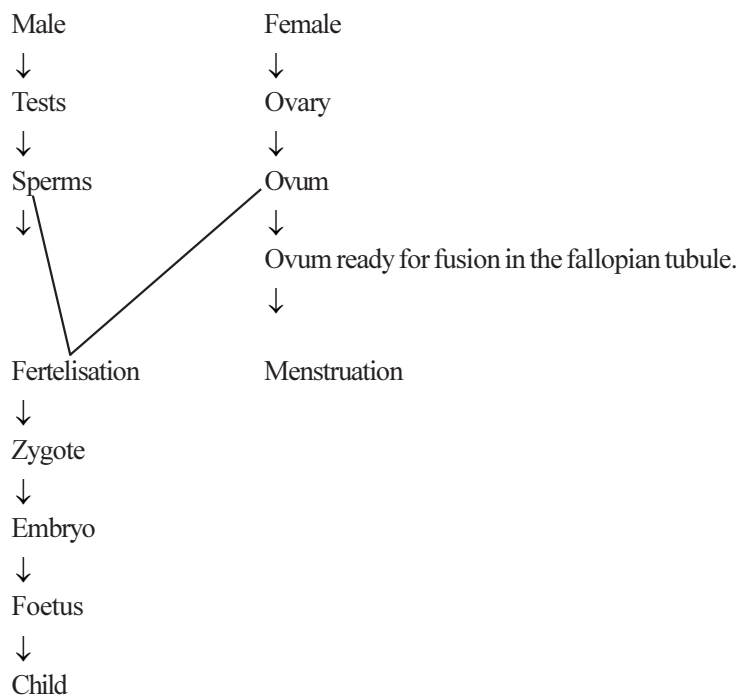
### **KEY FOR REPRODUCTION IN ANIMALS**

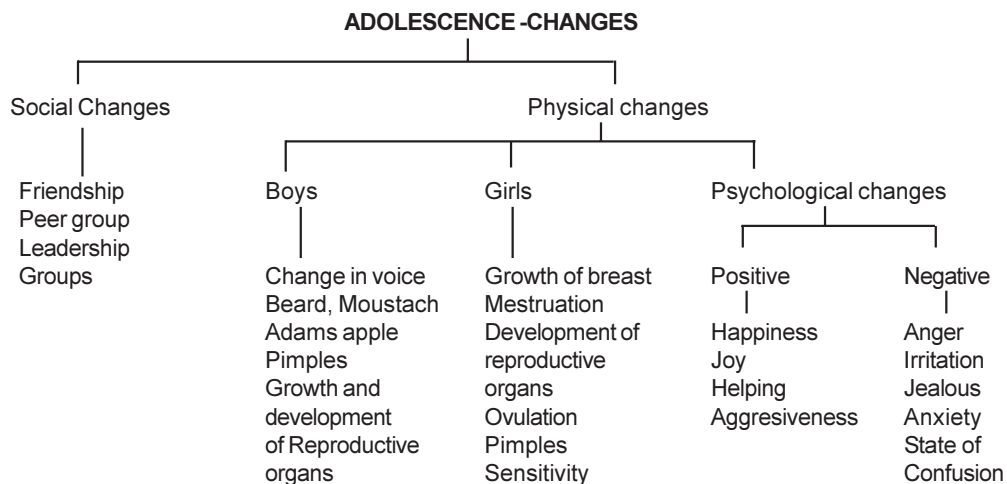
- |       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 1) 3  | 2) 1  | 3) 3  | 4) 2  | 5) 3  |
| 6) 3  | 7) 3  | 8) 2  | 9) 4  | 10) 2 |
| 11) 3 | 12) 4 | 13) 3 | 14) 3 | 15) 4 |
| 16) 1 | 17) 3 | 18) 2 | 19) 4 | 20) 2 |
| 21) 3 | 22) 4 | 23) 3 | 24) 3 | 25) 2 |

## 5. REACHING THE STAGE OF ADOLSCENCE

### ENDOCRINE GLANDS/ DUCTLESS GLANDS

- **Hypothalamus** : Hypothalamic Hormone
- **Pineal Body** : Melatonin
- **Pituitary glands** :- Growth Hormone
  - Follicle Stimulating Hormone
  - Leutinizng Hormone
  - Thyroid Stimulating Hormone
  - Prolactin
  - Vasopressin
  - Oxytocin
  - Alpha - Melanocyte Stimulating Hormone
- **Thymus gland** : Thymocin
- **Thyroid gland** : Tri Iodo Thyronine
  - Thyroxin
- **Adrenal gland** : Adrenalin, Aldosterone, Cortisol
- **Pancreas** : Insulin
  - Glucagon
- **Testes** : Testosterone
- **Ovary** : Oestrogen
  - Progesterone





## II. SYNOPSIS / KEY CONCEPTS

- Generally of the growth rate is maximum during the age between 13-19 years. This period of age is known as "Adolescent stage".
- Stanley Hall stated the Adolescent Age of Fluctuations.
- The Growth rate is maximum ie physically and psycholologically
- During adolescence many changes occur inside and out side of the body.
- During this stage growth rate is maximum in girls than boys.
- In Boys extensive growth of thyroid cartilage bone results in Adamis apple.
- Secondary sexual characters appear during this stage.
- In teenage ovulation occurs and releases ovum.
- If fertilisation do not occur.... un fertilised ovum, thickened walls of uterus along with blood secrutiout. This is called menstruation / Menstrual cycle.
- Menstrual cycle occurs for every 28-30 days.
- Menstrual cycle stops at the age of 45-50 years. This is known as "Menopause".
- Marriage helps in continuation of human race.
- Child marriage is a social crime.
- Minimum age of marriage for boys is 21 years and 18 years for girls in our country.
- The chemical substances release from Endocrine glands are called Hormones.
- As endocrine glands do not contain special duets, they are known as "Ductless glands".
- Personal hygiense should be maintained during adoles certain.

### BITS

1. Secretions of endocrine glands are called \_\_\_\_\_ (     )  
 1) Mineral salts     2) Hormones     3) Enzymes     4) Vitamins
2. Identify the secondary sexual character that is not seen in girls. (     )  
 1) Ovaries increase in size     2) Breast increases  
 3) Growth of facial growth     4) Release of matured ovum

3. Which type of food should be avoided \_\_\_\_ ( )  
 1) Dry fruits                      2) Junk foods      3) Roughages      4) Green salads
4. Secretions of ductless glands are called as \_\_\_\_ ( )  
 1) Enzymes                      2) Vitamins      3) Hormones      4) Mineral salts
5. The enzyme that controls emotions is \_\_\_\_ ( )  
 1) Growth Hormone   2) Testosterone   3) Adrenalin      4) Leutiniscng Hormone
6. Growth of Adams apple occur in adolescent boys due to \_\_\_\_ ( )  
 1) Hyper thyroidism                      2) Hypo thyroidism  
 3) Adam's crime                      4) Growth of thyroid cartilage
7. Which of the following are the characters of Adolescence.... ( )  
 1) Change in the voice                      2) Shyness  
 3) Un easynes                      4) All the above
8. Generally growth occurs during \_\_\_\_ in children ( )  
 1) Im between Byrs to 19 year                      2) In between 10012 years  
 3) In between 14-18 years                      4) In between 13-18 years
9. The growth rate is same among boys and girls in \_\_\_\_ year ( )  
 1) 15<sup>th</sup>                      2) 16<sup>th</sup>                      3) 18<sup>th</sup>                      4) 17<sup>th</sup>
10. Male hormones is \_\_\_\_  
 1) Oestrogen                      2) Adrenalin      3) Progesteron      4) Testosterone
11. Find the oddman out ( )  
 1) Anger                      2) Behaves independently  
 3) Without psychological Pressure      4) Being in confusion
12. Menstrual cycle occurs for every \_\_\_\_ days ( )  
 1) 20-30                      2) 25-30                      3) 28-30                      4) 30-32
13. The minimum age for marriage in girls is \_\_\_\_  
 1) 16 years                      2) 17 years                      3) 18 years                      4) 19 years
14. No. of cartelagenous bones in larynx (voice box) \_\_\_\_ ( )  
 1) 9                      2) 8                      3) 7                      4) 10
15. Which of the following is not correct in case of pimples ( )  
 1) Should not pinch pimples  
 2) Should wash face daily turicc with low alkaline soap  
 3) Should wash pimple with luke warm water  
 4) Should bother alot about pimples
16. Statement i : Parents influence is more m kids during the stage of adolescence.  
 Statement ii : Friends influence is more during adolescence. ( )  
 1) i and ii are true 12) i- true ii-false 3) i - false ii-true 4) i and ii false

17. Match the following

( )

**Part - I**

**Part - II**

- |                    |                   |
|--------------------|-------------------|
| 1. Testes          | a. Emotions       |
| 2. Ovaries         | b. Testosterone   |
| 3. Pituitary gland | c. Progesterone   |
| 4. Adrenal gland   | d. Growth hormone |

1. 1-a, 2-b, 3-c, 4-d

2. 1-b, 2-c, 3-a, 4-d

3. 1-b, 2-a, 3-c, 4-d

4. 1-b, 2-c, 3-d, 4-a

18. Which hormones are released from this gland ?

( )

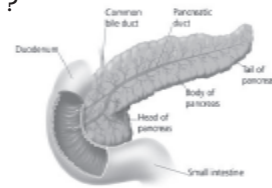
- |             |              |
|-------------|--------------|
| a) Insulin  | b) Cortisol  |
| c) Glucagon | d) Adrenalin |

1. a and b

2. a and c

3. a and d

4. None of the above



### KEY FOR REACHING THE STAGE OF ADOLESCENCE

1) 2

2) 3

3) 2

4) 3

5) 3

6) 4

7) 4

8) 1

9) 3

10) 4

11) 3

12) 3

13) 3

14) 1

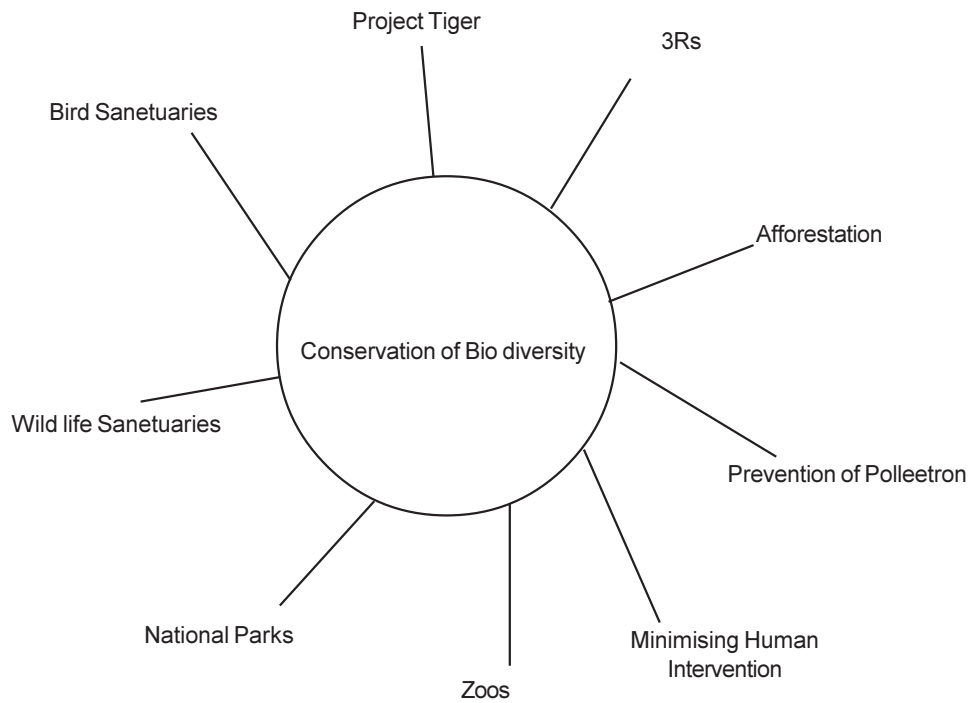
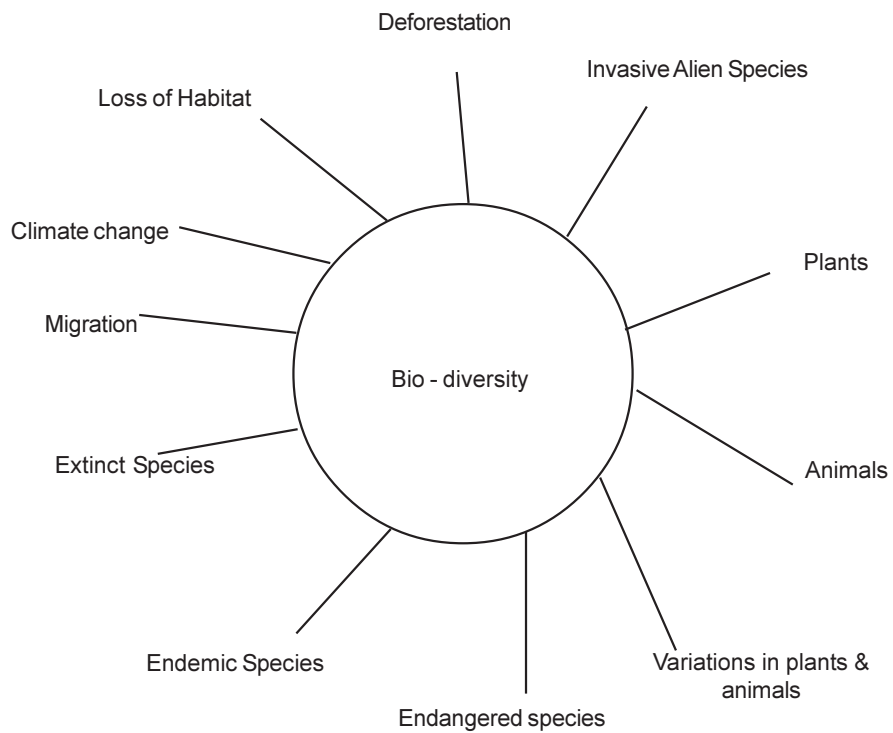
15) 4

16) 4

17) 4

18) 2

## 6. BIO DIVERSITY AND ITS CONSERVATION



## Main Points

- Bio diversity refers to the variety of organisms found in a particular area or habitat.
- The wild life means both plants and animals found in their natural habitat.
- Species of plants and animals found restricted to a particular area of a country are called Endemic species  
Eg : Kangaroo is endemic to Australia. Kiwi is endemic to Newzealand.
- Endangered species : It is a warning signal about the organisms whose number have declined rapidly and the species might be wiped off from the earth in near future. Such organisms are called Endangered species.  
Eg : Lion, Red fox, loris, wild cat.
- Extinct species : when animals vanish forever from the earth it is said that the species has become extinct.  
Eg : Sparrow, vulture, Do Do bird.
- Some birds which don't have permanent nestlings join into small flocks and move from one region to the other for food and are called migratory birds.  
Eg : Siberian Cranes
- The species which do not belong to the native habitat is called Invasive alien species (IAS)  
Eg : Invasion of pigeons to Hyderabad led to decrease in crows.  
Spanish flag plant of forests, water hyacinth in.
- Climate change, habitat loss, deforestation and fire wood collection are said to be the reasons for the loss of bio diversity.
- Keeping track of Endangered species "World Wildlife Federation or the International union for wild life conservation (I.U.W.C) Published a book containing the details of endangered and threatened species of flora and fauna called RED DATA BOOK  
Eg : Flora (Plants) - Orchids species, sandal wood tree, cycas, medicinal plants, Rauvolfia etc.  
Fauna (Animals) - Leopard, Indian Lion, Indian wolf.  
Red fox, Red Panda, Tiger etc.
- India shows a good number of endemic species About 62% of world's amphibians and 50% of lizards are endemic to western Ghats of India.
- International union for conservation of Nature (I.U.C.N.) and the zoological society of London (ZSL) released the list of world's 100 most threatened species. It contains four species from India, of the four species two are from Andhra Pradesh i.e. 1. Gooty tarantula (*Pecillothemetallica*), a spider found in Nandyal, Giddalur areas of Kurnool and Prakasam, 2. Great Indian Bustard found in Rollapadu Bird sanctuary in Kurnool.

- According to E.O. Wilson every year nearly 10,000 species or 27 species per day percome extinct through out the world.
- India has 60% of world's tigers.
- The Government of India launehed project Tiger in 1972 to save the tiger from the brink of extinction.
- At present 27 tiger reserves in India cover an area of 35000 sq. km.
- By the project Tiger the number of tigers incre from 2000 in 1973 to 3800 today.
- National Park - A large area hitehd to conserve the wildlife, particularly the wild animal species in their natural habitut.
- Eg : Jim corpet National park, Nainital of wetarakhan.
- Sanctuary : A place where conscrvation of species takes place with an objective of allowing human activity in a limited way without effecting the habitat.
- Eg : Pakal sanctuary, warangal.

11. The area where trees are dominant vegetation is called ( )  
 1) Forest                      2) Biodiversity    3) National Park   4) Sanctuary
12. Sunclarbans is present in ( )  
 1) West Bengal                                      2) Uttarakhand  
 3) Madhy Pradesh                                      4) Karnataka
13. Animals and plants which are at the verge of extinction are called ( )  
 1) Endemic species                                      2) Endangered species  
 3) Extinct                                      4) None
14. The variety of plants, animals and micro organisms generally found in an area is called ( )  
 1) National park    2) Biodivecriity    3) Sanctuary    4) All the above
15. The species of plants and animals found exclusively in a particular area is called ( )  
 1) Flora                                      2) Endemic species  
 3) Extinct species                                      4) None
16. The place where capturing and killing of animals is strietly prohibited is called ( )  
 1) Wild life sanctuary                                      2) Ecosystem  
 3) Biosphere                                      4) Biodiversity
17. The human activity that is responsible for loss of biodiversity ( )  
 1) Urbanisation                                      2) Afforestation  
 3) Establishment of biosphere reserve4) None
18. An example of extinct species ( )  
 1) The Roya Bengal Tiger                                      2) The Giant panda  
 3) Elephant                                      4) Dinosaur
19. The Endangered species are listed in ( )  
 1) Blue Databook                                      2) Red Data Book  
 3) Yellow Data Book                                      4) Green Data Book
20. Which of these is not caused by deforestation ( )  
 1) Global warming                                      2) Desertification  
 3) Reduction in groundwater                                      4) Storms
21. Which of these is not included under Red list ( )  
 1) Exinet                      2) Endemic    3) Endangered    4) Valnerable
22. World wide fund for Nature works in the field of ( )  
 1) Wildlife conservation                                      2) Forest conservation  
 3) Water conservation                                      4) Soil conservation
23. Recognise the protected area of animals ( )  
 1) National Park    2) Zoo                      3) Sanctuaries    4) All the above

24. To make a ton of paper how many trees have to be cut down ( )

- 1) 15                      2) 17                      3) 18                      4) 20

25. **Group A**

**Group B**

( )

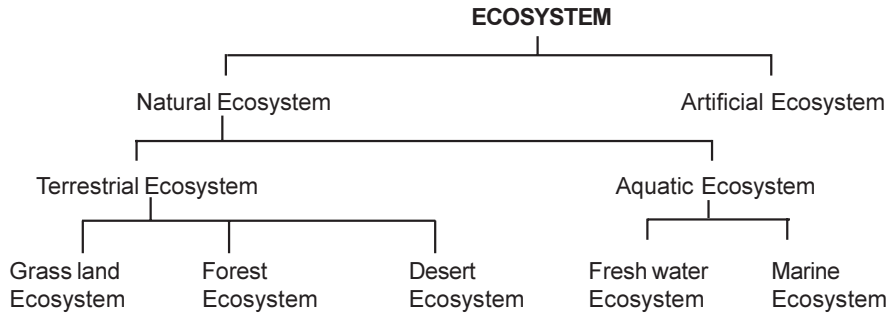
- |                           |     |                       |
|---------------------------|-----|-----------------------|
| 1) Project tiger          | ( ) | a) Peacock            |
| 2) Endemic species        | ( ) | b) Nepenther          |
| 3) Endangered species     | ( ) | c) Hyderabad Piegeon  |
| 4) Invasive Alien species | ( ) | d) 1972               |
| 1) 1-a, 2-c, 3-b, 4-d     |     | 2) 1-d, 2-a, 3-b, 4-c |
| 3) 1-d, 2-a, 3-c, 4-d     |     | 4) 1-a, 2-d, 3-b, 4-c |

### **KEY FOR BIO DIVERSITY AND ITS CONSERVATION**

- |       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 1) 3  | 2) 4  | 3) 4  | 4) 3  | 5) 4  |
| 6) 3  | 7) 1  | 8) 2  | 9) 4  | 10) 2 |
| 11) 1 | 12) 1 | 13) 2 | 14) 2 | 15) 2 |
| 16) 1 | 17) 1 | 18) 4 | 19) 2 | 20) 4 |
| 21) 2 | 22) 1 | 23) 4 | 24) 2 | 25) 2 |

## 7. DIFFERENT ECOSYSTEMS

- The word 'ecosystem' was first used by A.G. Tansley 1193.
- The sun is the main source of energy for all living things.
- Plants trap solar energy through photosynthesis.
- A food chain has three levels producers, consumers and decomposers.
- The biosphere is the largest ecosystem present on earth.



- Mangroves are one of the most productive ecosystems on earth, deriving nourishment from terrestrial fresh water and tidal salt waters.
- Coringa mangrove is situated south of Kakinada Bay and is about 150 km south of Visakhapatnam.
- The desert occupies about 17% of the land, and average rainfall less than 23 mm. per year.
- Camel is called the ship of desert.
- 57% of solar energy is absorbed in the atmosphere and scattered in space.
  - \* 35% is expended in heating water and land and in evaporating water.
  - \* 8% of light energy strikes the plants of which 80-85% is absorbed, and only 50% of it is used in photosynthesis.
- A food chain consists of four steps.
  1. The producers.
  2. Primary consumers
  3. Secondary consumers and
  4. Tertiary consumers.
- Energy flows from producers to consumers.
- At each transfer 80-90% of potential energy is dissipated as heat produced during the process of respiration and other ways.

### BITS

1. The word ecosystem was coined by ( )
  - 1) Reiter                      2) Tansley                      3) Odum                      4) None of the above
2. Which organisms form the base for most of the ecosystems ( )
  - 1) Producers                      2) Consumers                      3) Decomposers                      4) Any one of the above

3. Rabbit is a ( )
  - 1) Primary consumer
  - 2) Secondary consumer
  - 3) Tertiary consumer
  - 4) Decomposers
4. Which one of following is the most productive ecosystem ( )
  - 1) Desert ecosystem
  - 2) Pond ecosystem
  - 3) Mangrove ecosystem
  - 4) All the above are equally productive
5. Which of the following is producer ( )
  - 1) Fox
  - 2) tree
  - 3) chicken
  - 4) grass
6. Food chain have - levels ( )
  - 1) Two
  - 2) Three
  - 3) Four
  - 4) Five
7. The dwelling place for plants and animals is called ( )
  - 1) habit
  - 2) habitat
  - 3) Biome
  - 4) Ecosystem
8. Which of the following is artificial ecosystem ( )
  - 1) Pond ecosystem
  - 2) Forest ecosystem
  - 3) Aquarium
  - 4) Desert
9. The ultimate source of energy for all living organisms on earth ( )
  - 1) Sun
  - 2) Moon
  - 3) Stars
  - 4) Plants
10. Which of the following is not a producer ( )
  - 1) Spirogyra
  - 2) Euglena
  - 3) Ulothrix
  - 4) Daphnia
11. Which of the following is not a primary consumer ( )
  - 1) Cattle
  - 2) Rabbit
  - 3) Deer
  - 4) Frog
12. Teacher said that "it is our responsibility to conserve the mangroves" - The reason is ( )
  - 1) Food available for Aquatic animals
  - 2) They were useful as nursery's
  - 3) They are protective areas for the endangered species
  - 4) All the given
13. What is the reason for growing of roots deeply and spreads more in the xerophytes?
  - 1) To protect from the grazing of animals ( )
  - 2) Water availability is less in sandy soils
  - 3) It has thick and strong leaves
  - 4) To protect from the desert hurricanes
14. Terrestrial Ecosystem : Forest : : Aquatic ecosystem ? ( )
  - 1) Dessert
  - 2) River
  - 3) Grassland
  - 4) Mountain
15. Which of the following influence more changes in an Ecosystem rapidly( )
  - 1) Strong winds
  - 2) Earthquake
  - 3) Fire accielents
  - 4) Human activities
16. Choose the correct adaptation seen in the desert animals ( )
  - 1) Able to live with water scarcity
  - 2) Able to live in hot condition
  - 3) They are nocturnal
  - 4) All the given

17. The total area of land accupied by deserts ( )  
 1) 20%                      2) 13%                      3) 17%                      4) 40%
18. Arrang the sollowin in correct order in 4 food chain Eagle, Grass, frog, Grass  
 hopper, Snake, ( )  
 1) Grass → frog → Snake → Grass hopper → Eagle  
 2) Gross hopper → frog → Gross → Snake → Eagle  
 3) Snake → Eagle → Grass → Grass hopper → frog  
 4) Grass → Grass hopper → frog → snake → Eagle

### **KEY FOR DIFFERENT ECOSYSTEMS**

- |       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 1) 2  | 2) 1  | 3) 1  | 4) 3  | 5) 4  |
| 6) 3  | 7) 2  | 8) 3  | 9) 1  | 10) 4 |
| 11) 4 | 12) 4 | 13) 2 | 14) 2 | 15) 4 |
| 16) 4 | 17) 3 | 18) 4 |       |       |

## 8. PRODUCTION AND MANAGEMENT OF FOOD FROM PLANTS

- The plants grown in large number to get useful food products are known as crops.
- The process of growing crops is called 'Agriculture'.
- Long term crops - 180 days or more for harvesting. eg : Jowar, red gram.
- Short term crops - 100 days for harvesting eg : green gram, black gram.
- The crops grown in the rainy season (June to October) are termed as "Kharif" (Arabic means : Rain)  
Eg : Paddy, chilli, sugarcane, Jowar, cotton, moong, etc.
- The crops grown only in winter season (Oct to March) are generally called Rabi (means winter (Arabic))  
Eg : Wheat, maize, coriander, Fenugreek, Barli, etc.
- The hot climate of February is suitable for maturing the grains of wheat that is why it is cultivated in the Rabi season only.
- Rice is called global grain.
- The cultivation of paddy involves a series of activities.
  1. Preparing the soil
  2. Sowing of seeds
  3. Applying manure
  4. Facilitate water
  5. Weeding
  6. Crop harvesting
  7. Storage
- The name *Oryza* for paddy was named by Linnaeus  
*Oryza sativa* - cultivated in Asia.  
*Oryza faberrima* - " Africa.  
*Oryza glumapatula* : America
- National Seed Development Corporation of India preserves and promotes different varieties of seeds.
- SRI - System of Rice Intensification.
- DDT - Dichloro diphenyl Trichloro ethane.
- BHC. Benzene Hexa Chloride.
- In 1960 Rachel Carson wrote a book called 'Silent Spring' in which she pointed out the dangers of pesticides.
- The method of dispersing seeds by sprinkling is called broadcast.
- A modern device of watering plants is called sprinkler.
- Drip irrigation - water reaches the plants drop by drop through small tubes.

- The pollen grains of the parthenic plant cause allergy. It is imported along with wheat from America.
- Parthenium can be easily eradicated by spraying salt water.
- Dicot weedicide - 2 - 4 Dichloro Phenoxy acetate.

### **BITS**

1. Which of the following crop enrich the soil with  $N_2$  ( )  
 1) Ground nut      2) Paddy      3) Potato      4) Maize
2. Which of the following is kharif crop ? ( )  
 1) Rice      2) Wheat      3) Red gram      4) Mustard
3. Which of the following is not a kharif crop ( )  
 1) Wheat      2) Rice      3) Maize      4) Groundnut
4. Find out long term crops ( )  
 1) Greengram, black gram      2) Jowar, red gram  
 3) Mango, Jowar      4) Japota, black gram
5. Which one of the following is not long term crop ( )  
 1) Jowar      2) Redgram      3) Sugar      4) Black gram
6. The duration of short term crops ( )  
 1) 100 days      2) 180 days      3) 100-180 days      4) 50-150 days
7. In which of the following flowering will be more when night duration is more than 12 ½ hours ( )  
 1) Maize      2) Cotton      3) Both & 2      4) Sugar cane
8. One of the following is not an inorganic pesticide ( )  
 1) Arsenic      2) Zinc      3) Aldrin      4) Fluorine
9. The father of Indian green revolution ( )  
 1) H.G. Khorana      2) M.S. Swaminadhan  
 3) J.C. Bose      4) T.S. Venkatram
10. Transplantation of seedling is done in ( )  
 1) Coffee      2) Ground nut      3) Rice      4) Mango
11. Hari advised to farmers not to use high dose of pesticides. Guess the reason ( )  
 1) To reduce the expenditure      2) To protect harmful insects  
 3) Food may not be tasty      4) The friendly insects will die
12. Biological control of Agricultural pests, unlike chemical control is ( )  
 1) Very expensive      2) Self perpetuating  
 3) Toxic      4) Polluting
13. Growing of two or more crops simultaneously in same land is ( )  
 1) Mixed cropping      2) Mixed farming      3) Intercropping      4) Farming

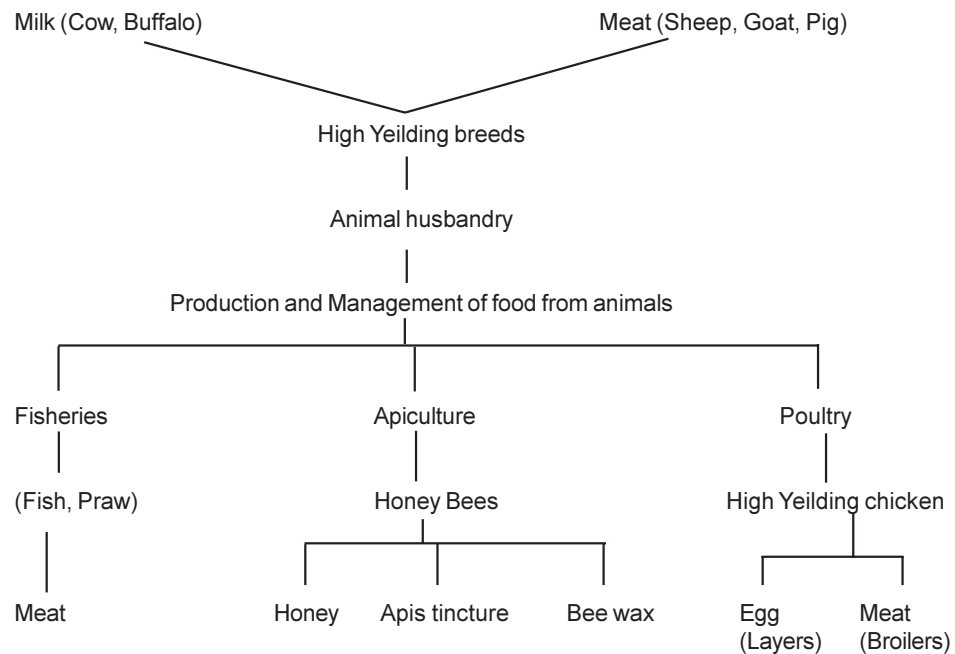
14. Crop rotation help in the replenishment of soil with \_\_\_\_\_ ( )  
1) Nitrogen                  2) Phosphorus      3) Potassium      4) Calcium
15. A pulse crop is grown between two cereal crops to compensate for \_\_\_\_\_ ( )  
1) Loss of water                                  2) Loss of Nitrogen  
3) Loss of Sulphur                                4) Loss of Phosphorus

## KEY FOR PRODUCTION AND MANAGEMENT OF FOOD FROM PLANTS

- |       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 1) 1  | 2) 3  | 3) 1  | 4) 2  | 5) 4  |
| 6) 1  | 7) 2  | 8) 3  | 9) 2  | 10) 3 |
| 11) 4 | 12) 2 | 13) 1 | 14) 1 | 15) 2 |

## 9. PRODUCTION AND MANAGEMENT OF FOOD FROM ANIMALS

### FOOD FROM ANIMALS



- We need food for our survival
- We eat varieties of food on our daily life.
- The food products obtained from plants and animals.
- Providing food, shelter, protection and breeding of live stock is known as Animal husbandry.
- Cattle farming is done mainly for two purposes.
  - Dairy Animals : Cows, buffaloes.
  - Draught animals : Animals used in agriculture and transport.
    - eg : Bullock, horse, elephant, bulls.
- Selective breeding helps in increasing the milk production. It is done by cross between local breed and an exotic cow.
- Murrah species gives up to 8 lit of milk per day.
- Traditional varieties - Haryana, Jafarabadi, Alagpuri.
- Foreign varieties - Jersey (England), Holstein (Denmark)
- After calving up to 72 hrs period of lactation gives colostrum.
- Vitamins - A, D, E Minerals, proteins and fat as emulsion are present in the milk.
- Cattle rearers and dairy farmers give 'Oxytocin' injection to cattle for high quality of milk.

- The residue of hormones in milk causes early puberty in children.
- The skin of the cattle is used in leather industry bones are used in fertilizer industry.
- The waste materials such as cow dung, left over grain are used to generate biogas / Gobar gas.
- Increase in production of milk and milk products since 1970 is called white revolution.
- Poultry : Production and rearing of hens in large scale.
- Poultry farms are two types - Broilers (for meat) Layers (for eggs)
- India achieved 4<sup>th</sup> position in the world by producing 41.06 million eggs per annum.
- 5<sup>th</sup> position for production of meat about 1000 million kgs per annum.
- Broilers grow completely in just 6 to 8 weeks.
- New Hampshire, white plymouth, Rhode island red white leghorn, Ancona - are foreign varieties for meat.
- Aseel, Kadaknath, chittagong, Longshan, Bursa are the pure local varieties.
- Aseel, is meant for fighting because of its pugnacity, high stamina and majestic gait.
- NECC - National Egg Co - Ordination committee.
- Emu culture - rearing of Emu birds. (Flightless bird from Australia)
- Culture of Honey bees is called Apiculture.
- Honey bees are best pollinators of many agriculture crops.
- Apis dorsata, Apis indica, Apis florea, Apis mellifera, Apis prhona and Apis cerana are well known species in India.
- Honey bees are social insects like ants and live in colonies.
- A colony consists of one queen, several thousands of workers (sterile females) and few hundreds of drones (male)
- Plants which contain nectar and pollen liked by bees are called bee flora.
- Bee venom is used for the preparation of Apitherapy, used in Homeopathic treatment.
- Bee wax is used in production of polish cream polish, etc.
- Wax moths, wasps, robber flies, dragon flies attack honey bee colonies.
- India has a coast line of about 7500 kms.
- Prawns, lobsters and crabs constitute the crustacean fishery.
- Popular marine fish varieties - Mackerel, Tuna, sardines and Bombay duck.
- Composite fish culture : A combination of five or six species of fish are used in a single fishpond.
- Catfish are surface feeders. Rohu feed in the middle zone of the pond. Mrigal and common carp are bottom feeders.

**BITS**

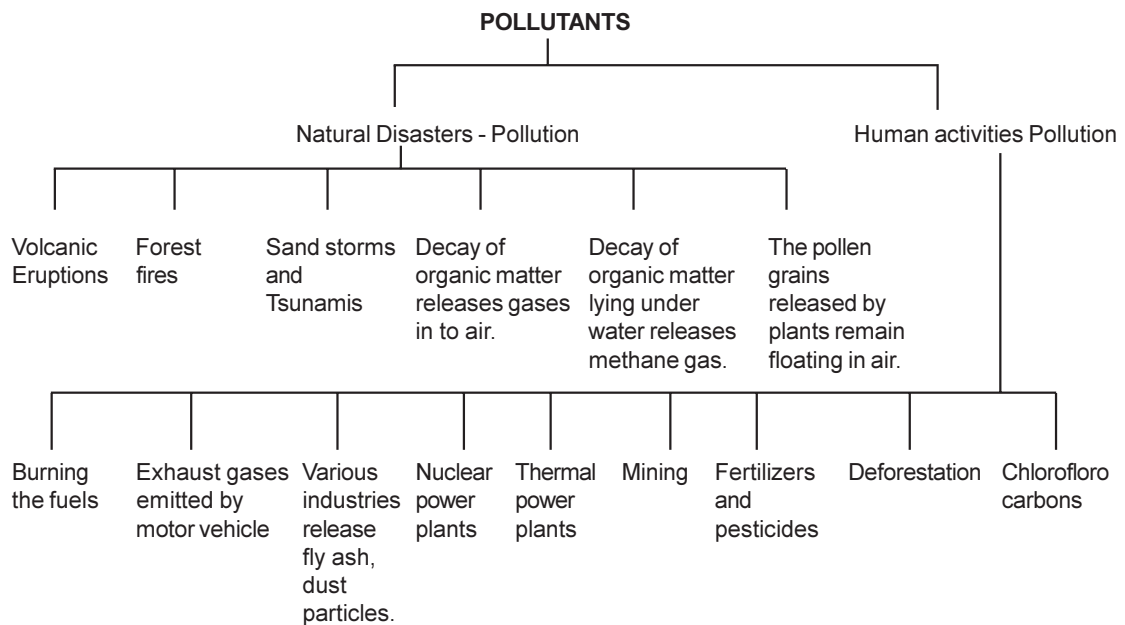
1. Which animal was famed earlier by human (    )  
1) Sheep                      2) Dog                      3) Pig                      4) Goat
2. One of the following animals is not reared for milk (    )  
1) Hen                      2) Cow                      3) Goat                      4) Buffalo
3. From which animals we get maximum milk production in India (    )  
1) Buffaloes                      2) Cows                      3) Goat                      4) Camel
4. Jersey : England : : Holstein : ? (    )  
1) Australia                      2) America                      3) Russia                      4) Denmark
5. According to economical and statistical survey of India - zoll, production of milk per day in our state ? (    )  
1) 20-40 Lakh lits                      2) 30-50 Lakhs lits  
3) 40-60 Lakh lits                      4) 980-90 PLakh lits
6. White revolution related to the production of (    )  
1) Milk                      2) Oils                      3) Meat                      4) Eggs
7. Father of white revolution in India (    )  
1) Prof . J.K. Kurian                      2) Nariman  
3) Sunderlal Baheeguna                      4) M.S. Swaminadhan
8. Chilka buffalows are reared in the following state (    )  
1) West Bengal                      2) Odisha  
3) Andhra Pradesh                      4) Tamilnadu
9. Bones are used in which of the following industry (    )  
1) Cement                      2) Irons steel                      3) Fertilizer                      4) Paper industry
10. Mutton : Sheep : : Pork : ? (    )  
1) Cock                      2) Buffalo                      3) Cow                      4) Pig
11. Broilers grow completely in just \_\_\_\_ weeks (    )  
1) 2 to 3                      2) 6 to 8                      3) 8 to 10                      4) 10 to 12
12. Which of the following is not a foreign varieties of meat giving species ? (    )  
1) New Hampshire                      2) Rhode island  
3) Anoka                      4) Bursa
13. Which one of the following is called Berisa Kodi (    )  
1) Assel                      2) Kadaknadh                      3) Chittagang                      4) Longshan

14. Hatching of eggs is generally influenced by \_\_\_\_ temperature ( )  
 1) 34°C                      2) 37 to 38°C              3) 40-41°C              4) 35°C
15. Expand NECC ( )  
 1) National Egg co-ordination committee  
 2) National Electrical cooperation committee  
 3) National Exams co-operation committee  
 4) None of the above
16. Which of the following is flight less bird ( )  
 1) Peacock                  2) Emu                      3) Hen                      4) Swan
17. Apiculture means ( )  
 1) Culture of Honey bees                      2) Rearing of Hen  
 3) Rearing of cattle                              4) Rearing of ants
18. How many queen bees in a honey bee colony ( )  
 1) One                      2) Two                      3) Three                      4) Four
19. **Bees**                      **Life span** ( )  
 1. Queen                      a) 57 days  
 2. Worker bee                      b) 2-3 years  
 3. drone                      c) 5-6 weeks  
 1) 1-a, 2-b, 3-c                  2) 1-b, 2-c, 3-a              3) 1-c, 2-a, 3-b              4) 1-b, 2-a, 3-c
20. Which of following animal hunts honey bee hives ( )  
 1) Fox                      2) Bear                      3) Monkey                      4) Elephant
21. Indian has a coast line of about \_\_\_\_ kms ( )  
 1) 5000 kms                  2) 6000 kms                  3) 7500 kms                  4) 9000 kms

### **KEY FOR PRODUCTION AND MANAGEMENT OF FOOD FROM ANIMALS**

- |       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 1) 2  | 2) 1  | 3) 2  | 4) 4  | 5) 3  |
| 6) 1  | 7) 1  | 8) 2  | 9) 3  | 10) 4 |
| 11) 2 | 12) 4 | 13) 1 | 14) 2 | 15) 1 |
| 16) 2 | 17) 1 | 18) 1 | 19) 2 | 20) 2 |
| 21) 3 |       |       |       |       |

## 10. NOT FOR DRINKING - NOT FOR BREATHING



### POLLUTION TYPES

- Air Pollution :- Ex : In 1984 at Bhopal leakage of MIC causes tragedy.
- Water Pollution :- Ex : The Musi river which fulfil the needs of Hyderabad become polluted.
- Soil Pollution :- Ex : Land fillings with garbage and solid wastes causes soil pollution.
- Thermal Pollution :- Ex : Cooling of power plants make the water heat.
- Radioactive pollution :- Ex : Nuclear power plants causes Radio active Pollution tchernobyl.
- Sound Pollution :

### COMMON POLLUTANTS AND THEIR SOURCES.

- Suspended particulate matter (SPM) :- Ex : Automobiles, power plants, Boilers, Crushing Grinding such as quarry, cement.
- Chlorine : Ex : Sea-salt production, dechlorination, Biomass burning and pulp & paper mills.
- Fluoride : Fertilizer, Aluminium, Refining.
- Sulphur Dioxide : Ex : Power plants, Boilers, Sulphuric Acid, ore refining, petroleum refining.
- Lead :- Ex : Ore refining, battery manufacturing, automobiles.
- Oxides of Nitrogen: - Ex : Auto mobiles, power plants, Nitric Acid Manufacture, Secondary pollutant.
- Peroxy Acetyl Nitrate (PAN):- Ex : Secondary Pollutant.
- Formaldehyde :- Ex : Secondary Pollutant
- Ozone :- Ex : Secondary Pollutant
- Carbon Monoxide : - Ex : Automobiles in complete fuel combustion.
- Hydrogen sulphide :- Ex : Pulp and paper, petroleum refining.
- Hydrocarbons :- Ex : Automobiles petroleum refining.
- Ammonia :- Ex : Fertilizer plant, degradation of dead animals.

### METHODS FOR CONTROLLING AIR POLLUTION

- Installing tall chimneys should be installed in all factories to reduce air pollution.
- Better designed fuel burning equipment should be used in homes and industries to burn fuel completely.
- Install electrostatic precipitators in the chimneys of industries.
- Reduce vehicular emissions by using non polluting fuels like CNG.
- Use LPG for domestic use.
- Improve the quality of fuel in automobiles and use catalytic converters in them.
- Make use of renewable alternative energy like solar energy wind energy and hydro energy.

### Water Pollutants

#### Definite source pollution



Pollution is due to discharges from a single source



It includes factories, waste water treatment facilities, septic systems that discharge into water.

#### Non - definite source pollution



It involves many small sources that combine to cause significant pollution.



The movement of rain or irrigation water picks up pollutants such as fertilizers, herbicides insecticides, biodegradable wastes etc.

## PREVENTION AND CONTROLLING OF WATER POLLUTION

- Toxic industrial wastes should be treated chemically to neutralize before discharging into water sources.
  - The sewage should not be dumped directly into rivers they should be treated in the plant.
  - The excessive use of fertilizers and pesticides should be avoided.
  - Instead of synthetic detergents use biodegradable detergents.
  - Dead bodies of human beings and animals should not be thrown into rivers.
  - The excreta and garbage should be treated in biogas plants.
  - The water of rivers, lakes etc. should be purified by the Govt. and industries.
  - Trees, shrubs should be planting along the banks of rivers.
  - Follow 3Rs principles to reduce pollution and recover resources.
- 
- The burst of volcanic mountains releases toxic gases like carbon dioxide and sulphur dioxide into atmosphere.
  - Bio degradable wastes release Ammonia gas into the air and pollute it.
  - The bio degradable substances present in water decomposes and release methane gas and become as pollutant.
  - The pollen grains released from flowers and pollute the air.
  - The Granite industry at cheemakurthi, in prakasam district pollutes the Air.
  - The Limestone industry pollutes the air at piduguralla in Guntur district.
  - Thermal power station at Ibrahimpatnam, in krishna district pollutes the soil, water and air.
  - Thermal power station present in Nellore district - Krishnapatnam.
  - Thermal power station present in vishakhapatnam at - Paravada.
  - Thermal power stations causes - Allergy, lung cancer diseases.
  - Atomic power stations causes - Radio active waste and High temperature problems.
  - The effect of Radioactive rays persists 10 Lakh years period.
  - The Atomic power station which meltdown due to high temperature Tchernobil in Russia in 1998.
  - The disease that show its effect on the people of "Tchernobil" incident - Thyroid gland cancer.
  - In Atomic power stations this elements are used as fuel Uranium, Thorium.
  - To maintain atmospheric balance, the forest must occupy 33% of the earth.
  - The actual percentage of forests now occupies - 19% on earth.
  - The wastes that are emitted from Refrigerators, airoplanes and A.C. machines - Chloro Floro carbons. (CFC).
  - The danger caused by chloro flor carbons - depletion in ozone layer.
  - Depletion in ozone layer leads to reach the ultra violet rays, which are dangerous.
  - The historical monument that was affected by air pollution was The Taj Mahal.

- No permit vehicle Area was imposed up to 2.5 kms by Indian Archeological Department, around Tajmahal.
- The vehicles which are allowed to visit - Battery vehicles, Horse carts etc.
- The Tajmahal was situated at Agra.
- The oil Refinery factory present near Agra - Mathura oil Refinery factory.
- The gases that causes acid rain  $NO_2$  and  $SO_2$ .
- The fuel that causes less pollution - CNG, LPG, Petrol without lead.
- The gas that causes Bhopal Gas Tragedy - Methyl Iso Cyanide (MIC)
- Asper world Health organisation, 2.4 millions people are dying due to air pollution every year.
- Due to accumulation of mercury in air causes Minimeta disease.
- Hydrogen sulphide gas has the smell of Rotten egg.
- Haemoglobin can be turned into carboxy haemoglobin by the presence of toxic gas - carbon monoxide.
- To reduce the air pollution, the industries must establish electrostatic prespitators to minimise.
- CNG - means - Compressed Natural Gas.
- LPG - means - Liquid petroleum Gas.
- If the blue litmus paper turned into red litmus paper when dipped in water, the water has Acidic nature.
- The Red Litmus paper turned into Blue Litmus paper, when dipped in Basic nature water.
- To know the hardness of water, soap is used.
- If the water form more foam (lather) with it, that water is soft or potable water.
- If the water didn't form foam with soap, that water is hard water.
- Water is universal solvent.
- The substances, that pollutes water are called water pollutants.
- Due to the accumulation of pollutaints the river Musi has turned into drainage canal.
- If pollutants are discharged into water from only one resource, it is called as definite pollutants.
- If pollutants are discharged into water from more than one resources, it is called as non - definite pollutants.
- The main neutrients of plants are Nitrates and phosphates.
- The enrichment of water by nutrients leading to excessive plant growth and deplication of oxygen is known as Eutrophication.
- One drop of engine oil can pollute 25 liters of water.
- To reduce the pollution we can impliment 4 R (Recycle, Reuse, Recover, Reduce) policy.

- Pollution under control certificate is issued only for 6 months time period.
- As per 1988 and 1998 motor vehicle Act, the emission of gasses limit from vehicles is determined.

### **BITS**

- The volume of carbondioxide in Air is ( )  
A) 0.3%                      B) 3.3%                      C) 0.033%                      D) 0.330%                      E) None
- The gas emitted from decaying organic wastes ( )  
A) Ammonia                      B) Methane                      C) Nitrogen                      D) Oxygen  
E) Carbon
- The decaying organic wastes in water release the following gas ( )  
A) Oxygen                      B) Hydrogen                      C) Methane                      D) Ammonia  
E) Nitrogen
- The effect of increasing of CO<sub>2</sub> in Amosphere leads to ( )  
A) Earthquakes                      B) Floods                      C) Global warmingD) Tsunami                      E) None
- Refrigerators, A.C. machines and Aeroplanes release the wastes like. ( )  
A) Chloroflorocarbons                      B) Chloroform                      C) Ammonia  
D) Urea                      E) None
- The dangerous rays that reaches the earth due to depletion of ozone layer.  
A) Infra Red rays                      B) Ultra violet rays                      C) Gama rays ( )  
D) Beeta rays                      E) None
- Incomplete burned fuels releases. ( )  
A) Carbon monoxide B) CarbondioxideC) Sulpherdioxide  
D) Nitrous oxide                      E) None
- MIC gas is released in this city ( )  
A) Delhi                      B) Agra                      C) Hyderabad                      D) Mumbai                      E) Bhopal
- To reduce the pollution the element which doesn't present in petrol ? ( )  
A) Gold                      B) Lead                      C) Silver                      D) Copper                      E) Iron
- In Atomic Power stations to produce power the following substances are used.  
A) Uranium                      B) Thorium                      C) Coal                      D) Lead ( )  
E) A and B
- In 1986 the place in Russia had effected the Radio active waste pollution  
A) Mosco                      B) Tchernobyl                      C) Leningrad ( )  
D) St. Petersburg                      E) None
- In thermal Power plants the most pollutant gas that releases is ( )  
A) SO<sub>2</sub>                      B) NO<sub>2</sub>                      C) N<sub>2</sub>O                      D) SO<sub>3</sub>                      E) None
- The forests occupys on the earth is ( )  
A) 33%                      B) 20%                      C) 19%                      D) 14%                      E) 100%

14. The gas that causes photosynthesis in plants ( )  
A) SO<sub>2</sub>                      B) NO<sub>2</sub>                      C) CO                      D) CO<sub>2</sub>                      E) H<sub>2</sub>S
15. If chloro Fluoro carbons are rich in atmosphere which will be damaged ? ( )  
A) Nitrogen layer    B) Oxygen layer    C) CO<sub>2</sub> layer    D) Ozone layer    E) None
16. The gas that causes Global warming ( )  
A) CO<sub>2</sub>                      B) CO                      C) Methane                      D) SO<sub>2</sub>  
E) All the above
17. The gas that releases from decaying dead bodies of plants and animals. ( )  
A) SO<sub>2</sub>                      B) CO<sub>2</sub>                      C) NO<sub>2</sub>                      D) H<sub>2</sub>S                      E) NH<sub>3</sub>
18. The company that is responsible for Bhopal Tragedy ( )  
A) Hindustan Liver    B) Union carbide    C) Parrys                      D) Godavari                      E) None
19. The substance that causes minimata disease. ( )  
A) Mercury                      B) Lead                      C) Gold                      D) Nitrogen                      E) None
20. The pollutant that forms black corrosion layer on silver ornaments. ( )  
A) CO<sub>2</sub>                      B) SO<sub>2</sub>                      C) H<sub>2</sub>S                      D) None
21. The substance that carries oxygen in body parts ( )  
A) Blood                      B) Haemoglobin    C) Plasma                      D) Serum  
E) Platelets
22. The fuel that is used in our houses for cooking ( )  
A) Kerosin                      B) Petrol                      C) L.P.G.                      D) Diesel                      E) Coal
23. Vanamahotsavam was held in which month ? ( )  
A) August                      B) November                      C) September                      D) May                      E) July
24. One of the most polluted area in India ( )  
A) Vijayawada                      B) Vizag                      C) Guntur  
D) Patancheru    E) None
25. Blue litmus : Acid :: Red Litmus \_\_\_\_ ? ( )  
A) Salt                      B) Base                      C) Water                      D) Turmeric  
E) Mineral
26. Universal solvent ( )  
A) Milk                      B) Kerosin                      C) Water                      D) Petrol  
E) Benzene
27. Now which river is being efforts taken to make less polluted river ? ( )  
A) Krishna                      B) Godavari                      C) Penna                      D) Kaveri                      E) Moosi
28. The nutrients required for plants growth are ( )  
A) Phosphates                      B) Nitrites                      C) Sulphates  
D) A and B                      E) B and C

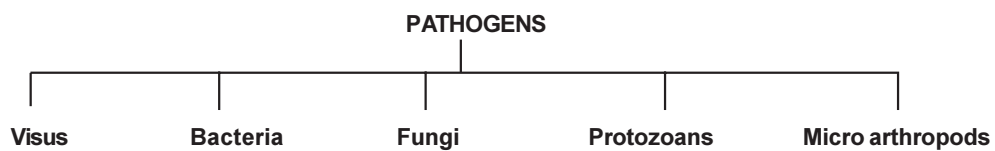
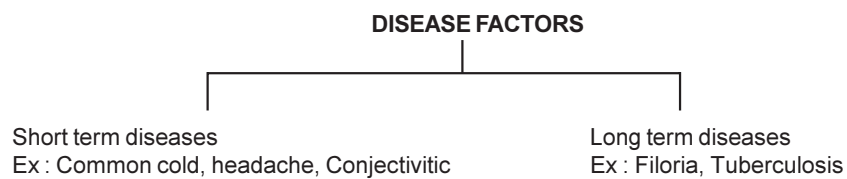
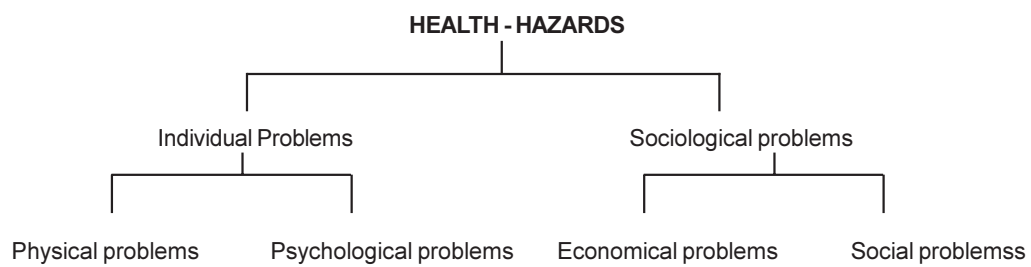
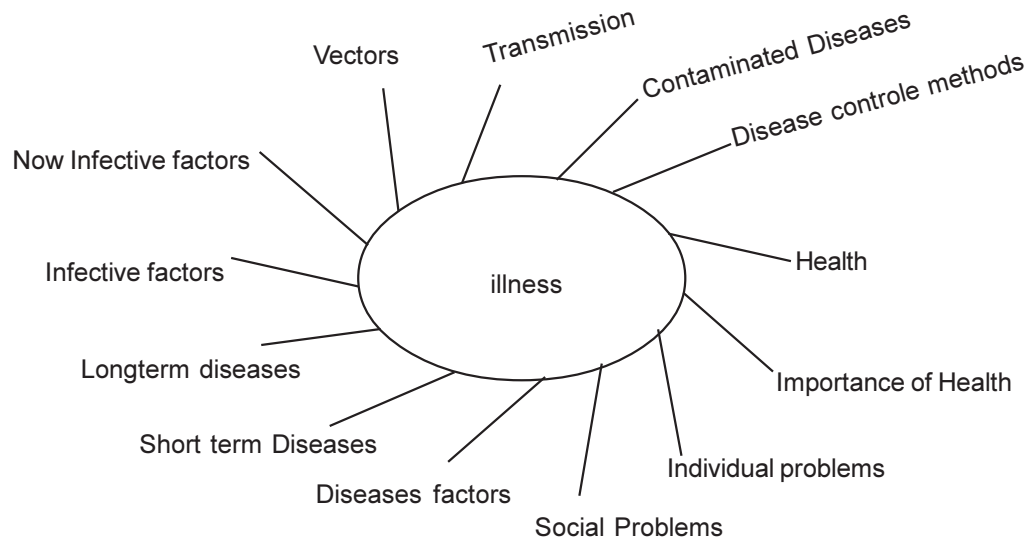
29. Under ground water become toxic because of which salts are adding to soil ? ( )  
 A) Sulphates                      B) Carbonates      C) Florides  
 D) Nitrates                      E) None
30. The disease caused by florides which presents in drinking water ? ( )  
 A) Clorosis                      B) Florosis              C) Necrosis              D) Pertusis              E) None
31. To reduce pollution, the rules we must follow are ( )  
 A) Recycle                      B) Reuse              C) Recover  
 D) Reduce                      E) All the above
32. Among the following which is a wrong statement ? ( )  
 A) Peroxy Acetyl Nitrate is a secondary pollutant  
 B) Ozone is a secondary pollutant      C) Formoldehyde is a secondary pollutant  
 D) Carbonmonoxide is a secondary Pollutant  
 E) Nitrogen oxide is a secondary pollutant
33. The department which superwise the Historical monuments ? ( )  
 A) Indian Archeological department      B) Indian metereological department  
 C) Pollution control Board                      D) Environment Department  
 E) None of the above
34. Example for Renewable Resources ( )  
 A) Solar power                      B) Wind power      C) Hydel power  
 D) Tydal power                      E) All the above
35. Match the following ( )  
 1. Cheemakurthi      A) Lime stone  
 2. Machela                      B) Thermal power  
 3. Piduguralla                      C) Cement industry  
 4. Krshnapatnam      D) Granite industry  
 A) 1-A, 2-B, 3-C, 4-D                      B) 1-B, 2-C, 3-D, 4-A  
 C) 1-C, 2-A, 3-A, 4-B                      D) 1-D, 2-C, 3-A, 4-B      E) None of the above
36. The pollutant that released in the manufacturing of fertilizers and Alluminium is ( )  
 A) Chlorine                      B) Floride              C) Lead  
 D) Ozone                      E) Formaldehyde
37. The substance that causes under ground pollution ( )  
 A) Chloride                      B) Floride              C) Methane              D) Nitrogen              E) None
38. The gasses that released on the eruption of volcanic mountains ? ( )  
 1) Carbon dioxide                      2) Sulphurdioxide  
 3) Oxygen                      4) Nitrogen  
 A) 1 and 2                      B) 2 and 3                      C) 3 and 4                      D) 4 and 1                      E) None

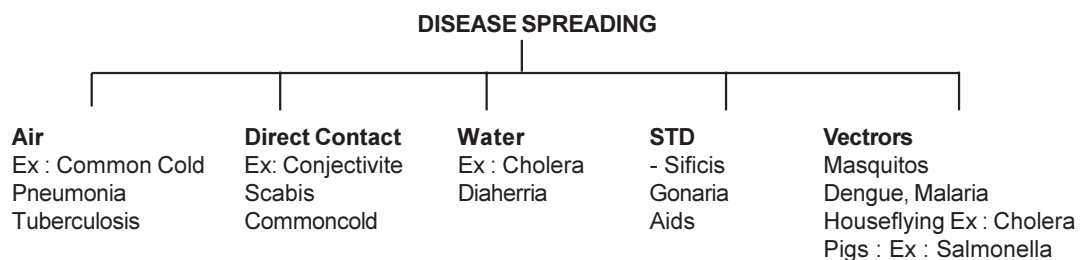
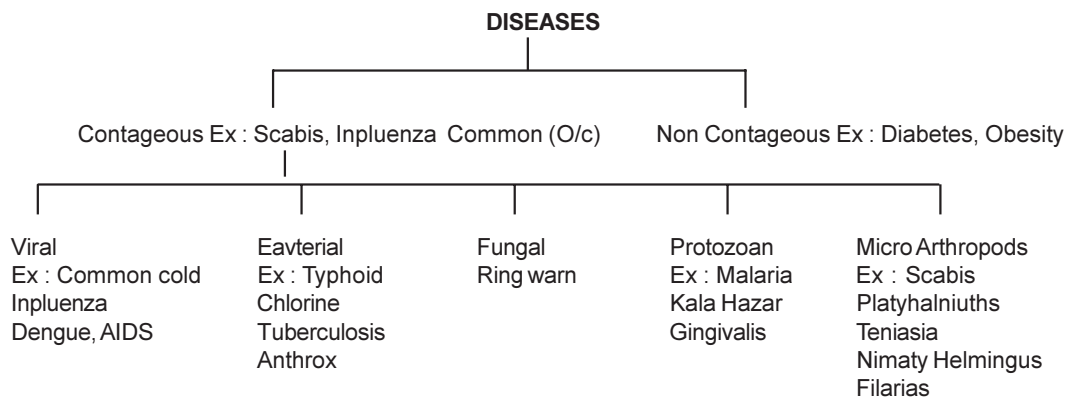
39. Once it's a drinking water river, now it's a drainage water river ( )  
 A) Krishna B) Godavari C) Ganga D) Yamuna E) Moosi
40. If biological wastes enters into water, they become as energy resource for( )  
 A) Virus B) Bacteria C) Fungus D) Protozoans D) None
41. Enrichment of nutrients leads to plant's growth and depletion oxygen volume in water known as ( )  
 A) Ammonification B) Oxydation C) Utrification D) Nitrification E) None
42. To reduce Air and water pollutions we must follow which formula ? ( )  
 A) 4 R B) 2 R C) 6 R D) 5 R E) None

**KEY FOR NOT FOR DRINKING - NOT FOR BREATHING**

- |       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 1) C  | 2) A  | 3) C  | 4) C  | 5) A  |
| 6) B  | 7) A  | 8) E  | 9) B  | 10) E |
| 11) B | 12) A | 13) C | 14) D | 15) D |
| 16) E | 17) E | 18) B | 19) A | 20) C |
| 21) B | 22) C | 23) E | 24) D | 25) B |
| 26) C | 27) E | 28) D | 29) C | 30) B |
| 31) E | 32) D | 33) A | 34) E | 35) D |
| 36) B | 37) B | 38) A | 39) E | 40) D |
| 41) C | 42) A |       |       |       |

## 11. WHY DO WE FALL ILL ?





- Health is a state of physical, mental social well being.
- Discomfort in our general functioning of body (or) body parts is called 'Disease'.
- Disease may be short termed (or) longtermd.
- Diseases caused by Microorganisms are called contagious Diseases.
- Diseases caused by Malfunctining in internal function of our body are Non contagious.
- In 1937, 'Robin Warran' of Australia Discovered a Microorganism 'Heliocobacter pylory' Which caused gastric celsers.
- In 2005 Marshall and Warran won Nobel Prize in Medicine for cure of gastric ulser can only possible by killing Helicobacter.
- Vector - Which carry pathogens. Ex : Housefly Masquito.
- Antibiotics - are used to kill microorganisms. Ex : Penciline.
- Viruses can only survives in Hostcell.

### **BITS**

1. Which of the following Disease suffers us for life time ? ( )  
 A) Malaria                      B) Ganaria                      C) Filaria                      D) Common
2. Gastric ulser is caused by ( )  
 A) Helilobacter                      B) Steptococus                      C) Vibriocholara                      D) Lactobacillus
3. Viral Disease ( )  
 A) Common Cold                      B) Dengue                      C) Influenza                      D) All above

4. Which of the following is not a bacterial Disease ( )  
 A) Typhoid                      B) Cholera                      C) AIDS                      D) Tuberculosis
5. Protozoan Disease ( )  
 (1) Malaria                      (2) Dengue                      (3) Kala Aizer                      (4) Filaria  
 A) 1 & 2                      B) 2 & 3                      C) 1 & 3                      D) 1 & 4
6. Elephantiasis is caused by ( )  
 A) Protozoan                      B) Bacterian                      C) Coelenterae                      D) Helminths
7. The organisms which act as living organisms in host cells only ? ( )  
 A) Viruses                      B) Bacteria                      C) Fungus  
 D) Protozoans                      E) Orthopods ( )
8. The first antibiotic used to prevent the formation of cell wall in bacteria ( )  
 A) Aurioncine                      B) Pencilline                      C) Tetracycline                      D) Neomycine
9. The viral Disease in liver ( )  
 A) Typhoid                      B) AIDS                      C) Hepatitis                      D) TB
10. \_\_\_\_\_ is better than cure ( )  
 A) Infection                      B) Prevention                      C) Treatment                      D) Medication
11. Which disease eradicated globally ( )  
 A) AIDS                      B) Polio                      C) Small pox                      D) None of above
12. Micro organism that causes Hepatitis ( )  
 A) HIV                      B) Hepatitis                      C) Mosaic                      D) Rabies

### **KEY FOR WHY DO WE FALL ILL ?**

- |       |       |      |      |       |
|-------|-------|------|------|-------|
| 1) C  | 2) A  | 3) D | 4) C | 5) C  |
| 6) D  | 7) A  | 8) B | 9) C | 10) B |
| 11) C | 12) B |      |      |       |