

# *First year Biology complete notes*

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**FIRST YEAR  
Chapter-1**

**KINGDOM MONERA**

A kingdom, which includes single cellular prokaryotic organisms such as virus, bacteria and blue green algae

**KINGDOM PROTISTA**

A kingdom, which includes single cellular eukaryotic plants and animals such as Euglena and Amoeba

**KINGDOM FUNGI**

A kingdom of single cellular (Yeast) and multi-cellular (Mushrooms) heterotrophs, which absorb organic matter.

**KINGDOM PLANTAE**

A kingdom of multi-cellular auto trophic plants, which have chlorophyll and do photosynthesis

**KINGDOM ANIMALIA**

A kingdom of multi-cellular animals which are heterotrophic in nature e.g. man

**BIOLOGY AND ITS BRANCHES**

**BIOLOGY**

A word of Greek Language that means "Study of living organism"

**ZOOLOGY**

Study of animals

**BOTANY**

Study of plants

**SOCIAL BIOLOGY:**

Study of relationship between various living organisms

**FRESHWATER BIOLOGY**

Study of organisms living in fresh water

**MARINE WATER BIOLOGY**

Study of organisms living in marine water

**MICROBIOLOGY:**

Study of micro-organisms is called microbiology. The organisms may be seen with microscope

**HUMAN BIOLOGY**

Study of biological status of a human being and its relationship with other organisms is called human biology

**SOCIAL BIOLOGY**

Study of inter-relationship of various living organisms is called social biology

**MORPHOLOGY**

Study of external appearance of organism and its organs

**PHYSIOLOGY**

Study of functions of body parts

**CYTOLOGY**

Study of structure, function and composition of cell

**HISTOLOGY**

Study of tissues (tissue mean a group of similar cells)

**TAXONOMY**

Study of classification of animals and plants

**EMBRYOLOGY**

Study of development of and embryo

**ECOLOGY**

Study of relationship of plants, animals and their environment

**PALAENTOLOGY**

Study of fossils.

**PALEOZOOLOGY**

Study of animal fossil

**PALEOBOTANY**

Study of plant fossil

**ZOOGEOGRAPHY**

Study of distribution of animals on earth

**PHYTOGEOGRAPHY**

Study of distribution of plants on earth

**GENETICS**

Study of transmission of hereditary characters

**PARASITOLOGY**

Study of parasites

**BACTERIOLOGY**

Study of Bacteria

### **VIROLOGY**

Study of virus

### **MYCOLOGY**

Study of fungi

### **GENETIC ENGINEERING**

Study on artificial changes brought in genetic material such as DNA.

### **MOLECULAR BIOLOGY**

Study of the molecular basis of the chemicals found in cell

### **ENTOMOLOGY**

Study of insects (animals with six legs are insects and they are also called hexapods)

### **PATHOLOGY**

Study of diseases

### **EVOLUTION**

Step-wise changes in an organism over a period of time

### **MYCOLOGY**

Study of Fungi

### **HYPOTHESIS**

Statement of a scientist based on his observations

### **MALARIA**

A word of Italian language which means "Bad Air". It is a disease characterized by chill and fever

### **PLASMODIUM**

The causative agent of malaria. It is single cellular protozoa, which lives half-life in man and remaining half in mosquito.

### **ANOPHELES**

A genus of mosquito, which acts as vector of malaria. Plasmodium parasite completes its sexual phase (gametogony) in female mosquito.

### **VECTOR**

An organism (particularly insect) which carries the infective stages of parasite and transmit it to host. For example, mosquito is the vector of plasmodium and Tsetse fly is vector of Trypanosoma parasites

### **LAVERRON-1878**

A French army doctor who saw plasmodium parasites in the RBC of malarial patient.

### **RONALD ROSS-1897**

A scientist who found plasmodium in the stomach of mosquito.

### **GRASSI-1898**

He discovered the life cycle of plasmodium in mosquito

### **KING-1883**

An American scientist who suggested that female Anopheles mosquitoes are involved in the spread of malaria.

### **SPOROZOITE**

A stage of plasmodium parasite. Sporozoites are small spindle shaped bodies, which are introduced by mosquito into man.

### **CRYPTOZOITES**

In 30 minutes the sporozoites enter in liver and are called cryptozoites

### **MEROZOITES**

When cryptozoites divide into small bodies, they are called merozoites. This initially happens in liver for 10 days and then in two times in RBCs

### **SCHIZOGONY**

An asexual type of reproduction in which a big number of merozoites are formed by the process of multiple fission.

### **TROPHOZOITES**

When merozoites enter into RBCs they are called trophozoites, which may be seen in ring stage and amoeboid stage.

### **SCHIZONT**

A cluster of merozoites is called schizont. They are seen in RBCs.

### **MICROGAMETE**

It refers to male plasmodium found in human blood

### **MACROGAMETE**

It represents female plasmodium also found in human blood

### **ZYGOTE**

The fusion of micro and macro-gametes will form zygote. In case of plasmodium this takes place in the gut of mosquito.

**Ookinete**

When the zygote changes into worm like structure it is called Ookinete. This also occurs in the gut of mosquito.

**ANTI-MALARIAL COMPOUNDS**

Drug/chemical that are used to kill malarial parasite.

**QUANA QUANA**

An anti malarial compound used to treat malaria.

**DDT**

An insecticide that is used to kill mosquitoes. It is now banned due to its harmful effects on other animals and plants.

Moreover, this chemical is no more capable to kill the mosquitoes, because of the resistance developed by mosquito

**CHEMOTHERAPY**

Treatment of diseases through drugs

**GUMBOSIA FISH**

A fish, which eats the larvae of mosquito. It is used in the biological control of mosquito

**HYDROPONICS**

Cultivation of plants on the surface of water is called hydroponics. It is also called soil-less cultivation

**CLONING**

A modern technique to make copy of DNA, cells, tissues, organs or whole organism. The first mammal clone was a sheep called Dolly. It was cloned in Scotland in 1996.

**DOLLY**

It is name of sheep (First mammal) which was cloned through cloning.

**ATOM** : The smallest possible unit of an element is called Atom

**SUB-ATOMIC PARTICLES**; Particles which make an atom are called sub-atomic particles. E.g. Proton, Neutron and Electron

**ORGANELLE**: Parts of cell are called organelle. E.g. Mitochondria,

**POPULATION**: Members of same species living in close association in an area is called population. E.g. Many human beings living in an area.

**COMMUNITY**: Population of several species living together in an ecosystem is called community

**INDUCTIVE REASONING**: Proving a hypothesis with the help of Experiments is called inductive reasoning

**DEDUCTIVE REASONING**: Final experiments on the bases of if and then is called deductive reasoning

**ANTIBIOTIC**: A substance which inhibit (stops) the growth of micro-organism such as virus and bacteria is called antibiotic. E.g. Penicillin

**CHEMOTHERAPY**: Treatment of diseases and infections with medicines is called chemotherapy.

**RADIOTHERAPY**: Treatment of medical problem (such as cancer and tumor) through rays is called radiotherapy.

**HYDROPONICS**: Cultivation of plants on the surface of water is called hydroponics. It is also called soil less or water culture.

**CLONING**: Production of duplicate copies of genetic material, cells, or entire living organism is called cloning. Dolly sheep was the first mammal which was cloned in 1996.

**BIOLOGICAL CONTROL**: Method to use one living organism to kill another organism is called biological control. E.g. Mosquito may be killed by introducing small fishes in water where mosquitoes breed.

**IMMUNIZATION**: It is the process by which an individual is given special types of agents (vaccines) to boost his/her immune system against that agent.

**VACCINATION**: A vaccine is an antigenic preparation used to establish immunity to a disease

**ANTIBIOTIC**: These are special types of medicines which are made from micro-organisms (such as virus and bacteria) and also

used against them.

***Pencilium notatum*** : It is a fungal organism from which the first antibiotic medicine was prepared.

### PRACTICE SHEET

1. **Till now scientists have discovered and named -----species of living organisms**  
(a) 1.5 million  
(b) 2 million  
(c) 2.5 million  
(d) None
2. **The smallest bacteria measure -----**  
(a) 0.0001mm  
(b) 0.001 mm  
(c) Both a&b  
(d) None
3. **The largest whale measures up to -----**  
(a) 40 meters  
(b) 45 meters  
(c) 50 meters  
(d) None\
4. **The maximum weight of whales is**  
(a) 150 tons  
(b) 50 tons  
(c) 200 tons  
(d) None
5. **The height of redwood tree is -----**  
(a) 300 feet  
(b) 320 feet  
(c) 400 feet  
(d) 100 feet
6. **The interaction within a population of animal species is known as**  
(a) Social biology  
(b) Sociology  
(c) Ecology  
(d) None
7. **Science that deals with use of data and techniques of engineering and technology for the study and solution of problems of human beings is**  
(a) Biotechnology  
(b) Genetics  
(c) Embryology  
(d) All
8. **.....♥ dani ♥.....`**
9. **Sugar, Amino acids, Fatty acids, Glycerol, purines and pyrimidines are**  
(a) Simple molecules  
(b) Conjugated molecules  
(c) Compound molecules  
(D) All
10. **The part of earth inhabited by living organisms is terms as**  
(a) Biosphere  
(b) Geo  
(c) Earth  
(d)None
11. **It refers to a specific geographical area where living communities live together**  
(a) Ecosystem  
(b) Ecology  
(c) Population  
(d) None

12. **Two or more populations of different species living and interacting in the same area are known as**  
(a) Community  
(b) Population  
(c) Ecosystem  
(d) All
13. **Members of same species inhabiting in same area is known as**  
(a) Population  
(b) Community  
(c) Ecosystem  
(d) None
14. **Tentative statement of scientists is termed as**  
(a) Hypothesis  
(b) Deduction  
(c) Reasoning  
(d) None
15. **Efforts to prove or dis-prove a hypothesis through experiments is called**  
(a) Inductive reasoning  
(b) Deductive reasoning  
(c) Both  
(d) None
16. **Repetition of experiments on bases of ifs and buts is called**  
(a) Deductive reasoning  
(b) Inductive reasoning  
(c) Hypothesis
17. **In recent times the rate of infant mortality has**  
(a) Increased  
(b) Decreased  
(c) Unchanged  
(d) None
18. **The reduction in mortality and morbidity is mainly due to**  
(a) Immunization  
(b) Vaccination  
(c) Both  
(d) None
19. **The Vaccination was first introduced by Edward Jennir in**  
(a) 1795  
(b) 1700  
(c) 1785  
(d) 1800
20. **Chemical substances which are low in concentration and inhibit the growth of micro-organisms are called**  
(a) Antibiotics  
(b) Antigen  
(c) Antibodies  
(d) None
21. **Agaricus (mushroom) is example of**  
(a) Monera  
(b) Protista  
(c) Fungi  
(d) Planate
22. **Yeast is a most popular fungi, it is**  
(a) Single cellular  
(b) Multicellular  
(c) Both  
(d) None
23. **Cynobacteria is the examples of**  
(a) Protista

- (b) Fungi
  - (c) Monera
  - (d) None
24. **The first antibiotic developed was**
- (a) Decadal
  - (b) Septran
  - (c) Penicillin
  - (d) None
25. ***Pencillium notatum* was isolated from**
- (a) Monera
  - (b) Fungi
  - (c) Plant
  - (d) Animal
26. **Fleming, Florey and Chain are credited for development of**
- (a) Antigen
  - (b) Antibody
  - (c) Antibiotic
  - (d) All
27. **Treatment of diseases by chemicals, drugs, medicines is called**
- (a) Radiotherapy
  - (b) Chemotherapy
  - (c) Both
  - (d) None
28. **Treatment of cancer and tumor with rays is termed as**
- (a) Phototherapy
  - (b) Radiotherapy
  - (c) Chemotherapy
  - (d) None
29. **The science of growing terrestrial plants in an aerated solution is known as**
- (a) Hydroponics
  - (b) Hydrology
  - (c) Hydrants
  - (d) All
30. **One benefit of hydroponics is that it helps in control of**
- (a) Weeds
  - (b) Soil diseases
  - (c) Both a&b
  - (d) None
31. **A technique used to produce duplicate copies of genetic material, cells or entire organism is called**
- (a) Asexual reproduction
  - (b) Cloning
  - (c) Parthenogenesis
  - (d) All
32. **The first mammal clone was named as**
- (a) Dolly
  - (b) Dully
  - (c) Both
  - (d) None
33. **The first mammal clone was done in**
- (a) 1995
  - (b) 1993
  - (c) 1996
  - (d) None
34. **One of the following is product of cloning**
- (a) Identical twins
  - (b) Non-identical twins

- (c) Both a&b
  - (d) None
35. **Insulin, Growth hormones, interferon, and antithrombin production is achieved by**
- (a) DNA recombinant
  - (b) Cloning
  - (c) Transgenic animals
  - (d) None
36. **By introducing small fishes will help eat the mosquito larvae. This may be termed as**
- (a) Chemical control
  - (b) Biological control
  - (c) Neutral control
  - (d) All

**KEY**

<b>NUMBER</b>	<b>CORRECT OPTION</b>
1	A
2	A
3	A
4	A
5	A
6	A
7	A
8	A
9	A
10	A
11	A
12	A
13	A
14	A
15	A
16	A
17	B
18	C
19	A
20	A
21	C
22	A
23	C
24	C
25	B
26	C
27	B
28	B
29	A
30	C
31	B
32	A
33	C
34	A
35	B
36	B