Chapter 6

Kingdome Monera

A. Fill in the blanks.

1. The trcehome of nostoc together with the mucilaginous sheath are collectively called **filaments.**
2. The cyan bacteria contain chlorophyll and another pigment called **phycobilin.**
3. The plasma with fibrinogen removed is known as **serum.**
4. The disease transmitted to the people by the bites from rabid dogs is termed **Hydrophobia or Rabies**.
5. In the cell wall of bacteria sugar and amino acids are linked together to form a huge molecule called **Murein.**
6. The amorphous substances formed by the partial decay of dead animals and plants in the soil are known as **humus.**
7. Substances capable of stimulating the formation of antibodies are called **antigens**.
8. Large rounded and colorless cell found in the trichome of Nostoc are termed as **hetero cysts**.
9. The disease causing bacteria are called **pathogenic bacteria**.

B. Choose the correct answer by double encircling in it.

1. all of the following are examples of cyano-bacteria except
   (a) Nostoc (b) Anabaena (c) Scillatoria **(d) Spirogyra**
2. All of the following are methods of asexual rereproduction in cyano-bactreia except
   (a) Hormogonia **(b) binary fission** (c) spore formation (d) AKinete
3. Resistance of skin to invasion by bacteria is called
   (a) Active immunity (b) passive immunity **(c)** innate immunity (d) acquired immunity
4. rod shaped bacteria are called
   (a) Coeci (b) spirilla **(c) bacilli** (d) vibrio
5. Transduction in bacteria was demonstrated by
   (a) Leader berg and Taum **(b)** Leader berg and Zinder
   (c) Avery and zinder (d) Griffith and leader berg
6. Heating milk at 71°c for 15 minutes at 62°c for 32 minutes is
   (a) Sterilization **(b) pasteurization** (c) radiation (d) preservation
7. The bacteria that can live in the presence of oxygen if available but do not essentially require oxygen are said to be
   (a) Aerobes (b) Anaerobes **(c)** Facultative (d) None of them
8. The bacteria that can get food from the dead host are
   (a) Photosynthetic bacteria (b) Chemosynthetic bacteria
   (c) Parasitic bacteria **(d) saprophytic**
9. In cyano-bacteria the large cell with thick walls large DNA and large amount of food are called.
   (a) Akinetes (b) Hormogonia (c) Heterocyst (d) None of them
10. Bacteria and cyano-bacteria belong to kingdom
    (a) Plantae (b) Fungi (c) protista **(d) Monera**

C. Tick (√) if the statement is correct and (ξ) if the statement is false. Correct the false statement and rewrite it.

1. Sex cells or gametes are completely lacking in members of kingdom Monera. √
2. cyano-bacteria reproduce both asexually and sexually.
3. Vaccine generally consists of killed or weakened germs of the same disease against which is used √

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4. The digestive system especially the intestine is the home of many different kinds of bacteria.√
5. Plasmids are circular ring of DNA present in bacteria. √
6. The cell membrane of bacteria invaginates into cytoplasm to form pocket like structures called mesosome √
7. Salmonella typhose causing typhoid is bacillus type bacteria. √

D. Match column 'A' with correct statement from column 'B' and write the correct statement in column 'C'.

S.No	Column A	Column B	Column C	
1	Coeci	a. Rod like Bacteria	**1-g**	**Rounded**
2	Diplococcus	b. Comma like bacteria	**2-d**	**cocci in pairs**
3	Streptococcus	c. cause cholera	**3-e**	**cocci in chains**
4	Atrichus	d. cocci in pairs	**4-f**	**Non-flagella**
5	Bacilli	e. cocci in chains	**5-a**	**Rod like Bacteria**
6	Clostridium	f. Non-flagella	**6-h**	**example of bacilli**
7	Spirille	g. Rounded	**7-i**	**Spiral Bacteria**
8	Vibrio	h. example of bacilli	**8-b**	**Comma like bacteria**
9	Tryponema	i.. Spiral Bacteria	**9-j**	**Example of spirill**
10	Vibrio comma	j. Example of spirill	**10-c**	**cause cholera**

E. Define the following terms.

1. **Trichome:** filament of blue green algae in which the cells are arranged in chain or filament in cells are attached end to end forming individual chain in blue green algae.
2. **Antibody:** globular blood proteins produced by the B- lymphocytes and that bind specifically to foreign antigen or diseases causing agents and destroy them. These proteins produced by the whit e blood cells (B-lymphocytes) protect or body against the attack of diseases.
3. **Immunity:** it is the ability of the human body to resist the invading organisms that tend to cause disease and damage body. The process used to develop immunity in the body is called immunization. Immunization with vaccine is called vaccination. Immunity may be natural acquired or artificially acquired. one attack if a disease life small pox or measal etc, protect the sufferer from a second attack because of producing immunity in the body naturally. Artificially vaccines are introduced in the body to produce arterially acquired immunity. Passive immunity is one in which antibodies are introduced in the body instead of antigens or vaccines.
4. **Transduction:** transference of the genetic material from one bacterium to another by a vector or bacterio-phage. This process was discovered by leader berg and zinder in 1952, and was considered as a type of sexual Rep in bacteria.
5. **Transformation:** a process of sexual reproduction discovered by Griffith in 1928. it is defined a the process in which change in the genetic material occur, by absorbing DNA from the surrounding.
6. **Plasmids:** circular ring of extra chromosomal DNA present in bacterial cell which contain certain antibiotic resisten gene.
7. **Autoroph:** all those organisms which can synthesize their own food from simple substance while hetrotroph can not make their food from simple substance e.g. mushroom.

Q 8. What is difference between Parasite and Saprophytes?

Ans. Parasite: Parasite is those hetrotroph which draw nourishment form a living host. They may ecto-parasite, when they are present on the body living organisms e.g. leach, it lice's etc. when they are

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present inside the body of living organism, they are called end parasites. e.g. Bacteria, intestinal warms. Cuscuta and mistletoes are one of the plant parasite which draw their food from other plants.

Saprophytes: Saprophytes are those hetrotroph which draw their nourishment from dead organic matter. e.g. Bacteria and fungi which carry our decomposition process and are also called decomposers or reduce

Q 9. Give difference between gram-positive and gram negative bacteria.

Ans. Gram-positive bacteria differ from gram-negative bacteria, in the chemical composition of their cell wall and their for gram-positive bacteria absorb gram stain permanently and is not washed even with organic solvents. Gram negative bacteria absorb gram stain but not permanently and can be washed with organic solvent.

Chemically the cell wall of gram positive bacteria is composed of more peptidoglycan and less lipid whole gram negative bacteria contain more lipid and less peptidglycan

A. Fill in the blanks

1. A bacterial arrangement in packet of eight cell is described as **Sacina**.
2. The shape and arrangement of **Cocci in pair** is diplococci.
3. pili are tubular shafts of in bacteria that serves as a means of **genetic exchange** i.e. mating i.e. and rarely for attachments.
4. **Conjugation** are unusual type of bacteria that live in extreme habitat.
5. **Green sulphur** bacteria **purple sulphur** bacteria and **purple non sulphur** bacteria are photosynthetic bacteria.
6. **Nostoc**, **oscillatoria** and **anabaena** are cyano-bacteria.
7. **Cyano-bacteria** are called as bloom forming organism.
8. Use of antibiotics is one of the means of controlling **many infectious** diseases.

B. Each question has four options. Double encircle the correct answer.

1. which of the following is not fond in bacterial cell
   (a) Cell membrane (b) Ribosome's (c) Nucleoid **(d) Capsule**
2. The major locomotory structure in bacteria are
   (a) Flagella (b) fimbriae (c) pili (d) capsule
3. Which of the following is a Primary bacterial cell wall function?
   (a) Transport **(b) Support** (c) Motility (d) Adhesion
4. Which of the following is present in both gram positive and gram negative bacteria cell wall?
   (a) An outer membrane (b) peptidoglycan (c) Techoic acid (d) lipopoly saccharide
5. Mesosomes are internal extensions of the
   (a) Cell wall **(b) cell membrane** (c) chromatin body (d) capsule
6. Bacterial end spores function in
   (a) Reproduction (b) Protein synthesis **(c) Survival** (d) Storage.

C. Short Questions

Q 1. (a) Name general characteristics that could be used to define prokaryotes.

Ans. Simple organisms with prokaryotic cells. Their cells do not have a definite nucleous nor do they have membrane bound organelles like mitochondria golgi-bodies.

Q (b) Do any other microbial group beside bacteria have prokaryotic cells?

Ans. Yes. They are cyano-bacteria also called blue green algae. e.g. Nostoc, oscillatoria.

Q. (c) In what habitats are bacteria found? Give some general means by which bacteria derive nutrients.

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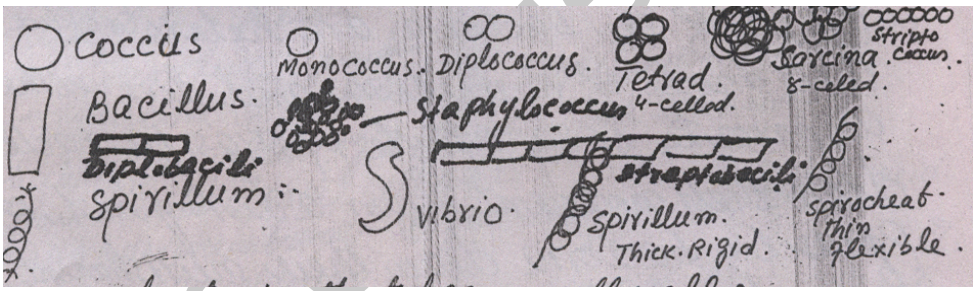
Ans. Bacteria are cosmopolitan and are found in a wide variety of habitats. e.g. terrestrial habitat water and air upon the bodies of living organisms or with in the bodies of living organisms. Most of the bacteria are heterotrophic in their mode of nutrition and live either as parasite or saprophytes. Parasitic bacteria draw their nutrient form a living host while saprasitic bacteria draw their nourishment from dead organic matter. a few bacteria are autotrophic and synthesize their food either by photosynthesis or chemo thesis. Photosynthetic bacteria use light energy for the synthesis of their food while chemosynthetic bacteria use chemical.

Q 2. List functions of cell membrane perform in bacteria.
Ans. **(1)** It regulates transport of materials like proteins, sugar, nutrients or other metabolites.
(2) it also contain enzymes for respiratory metabolism.

Q b **What are mesosomes and some of their possible function?**
Ans. Mesosomes are vesicles, tubules or lamellae like structures which are formed by the invagination Or extension of cell membrane **(1)** they are involved in replication of DNA and cell division**. (2)** Export of exocellular enzymes. **(3)** Respiratory enzymes are present on mesosomes.

Q 3. **What is unique about structure of bacterial Ribosome?**
Ans. Bacterial ribosomes are smaller than eukaryotic ribosome's. Their size is 70s, where S is saved berg unit for the size of Ribosome. Mostly they are free or sometime attached to cell membrane.

Q 4. **Draw the three bacterial shapes.**



Q 5. **Name a bacteria that has no cell wall?**
Ans. Mycoplasma.

Q 6. **a gram stained discharge from an abeess shows cocci in irregular grape like cluster what is the most likely genus of this bacterium.**
Ans. Staphylococcus is the genus.

Column A	Column B	Column C
a. division in one plane cocci arranged in pairs	a. bacillus	**h. diplococus**
b. division in one plane coci arranged in chains	b. streptobacillus	**f. streptococcus**
c. division in two planes cocci arrange in a saqure of four.	c. spirochete	**i. tetrad**
d. division in one pane after division	d. spirillum	**a. bacillus**
e. division in one plane Rods arrange in chains	e. vibrio	**b. streptobacillus**
f. a commaa shaped bacterium	f. streptococcus	**e. vibrio**
g. a thin flexible spiral	g. staphylococcus	**c. spirochete**
h. a thick rigid spiral	h. diplococcus	**d. spirillum**
i. division in three planes coccie arranged in a cube of 8.	i. tetrad	**j. sarcina**
	j. sarcina	

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Chapter 7

The kingdom protista or protoctista

A. Fill in the blanks with suitable words.

1. The protests which are all eukaryotes have one and the same origin i.e. **from prokaryote.**
2. The main locomotory organ in mastigopora is **flagella.**
3. The most familiar naked fresh water sarcodine is **amoeba.**
4. The shell of shelled sarcodines can be used for **identification** of its different species.
5. The two groups of shelled saccodines are foraminifera and **radiolaria.**
6. sporozoa are the organisms which are all **internal parasites** and **don't have special locomotory organ.**
7. Paramecium belongs to the phylum ciliate.
8. True slime molds belong to the division **myxomycota.**
9. Euglenoids are animal like because they lack **cell wall.**
10. There is an orange granule towards the anterior end of euglena and is a light detector called **Eye spot** or **stigma.**

B. Tick (√) the statement if it is true and (χ) it is false. Rewrite the false statement of correcting.

1. The protests are all eukaryotes √
2. Sarcodines are more closely related to sporozoe than to other protozans.χ
3. The phase of plasmodium which enters into the human's blood by biting & mosquito consists of Merozoites.χ
4. Cytopharynx is a special oral groove found in paramecium. χ
5. The micronucleous present in ciliate is concerned with reproduction. √
6. The slim molds i.e. gymnomycota are often white but some time coloured red or yellow. χ
7. The animal like charter of slime molds is its diploid multinucleate phase plasmodium.√
8. Pseudopodia of sarcodines function both in locomotion and feeding by phagocytosis.√
9. Ppyrenoids present in euglena are responsible for the production of paramylum.√

C. **Chooses the correct option by double encircling it.**

1. Paramecium belongs to one of the phylum called
   (a) Mastigopra **(b) Ciliata** (c) Sarcodina (d) Sporozoa
2. The main locomotory organ in Mastigophora are
   (a) Flagella (b) ciliate (c) sarcodina (d) sporozoa
3. The parasite that causes African sleeping sickness is
   (a) Entomoeba histolytica (b) plasmodium vivax **(c) Trypansoma gambiense** (d) Paramecium
4. Entamaeba histolytica cause amoebic dysentery because this parasite feeds on the cell that live in Human.
   (a) Stomach (b) duodenum **(c) colon** (d) Rectum
5. all of the following are characteristic of sporozoa except
   (a) Sporo like cyst stabe in life cycle **(b) all are external parasites**
   (c) Have no-locomotory organ (d) causes many serious human disease
6. Fertilization of plasmodium take place by union of male and female gametes with in
   (a) Liver of man **(b) Midgut** (c) blood of man (d) Mouth cavity of mesquites
7. The sporozoties enter into the human blood stream and carried to the liver where they stay for.
   (a) 1-5 days **(b) 5-15 days** (c) 15-25 days (d) 25-30 days.
8. Which of the following is the largest protozoan phylum?
   (a) sporozoa (b) mastigophora (c) sarcodina **(d) ciliate**
9. Cellular slime molds belong the group.
   (a) myxomycota (b) protomycota **(c) aerasomycota** (d) oomycota
10. Most of the oomycota live in

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(a) Water (b) soil (c) host (d) Air

11. All of the following refer to oomycota except
(a) Have flagellated zoospores **(b) sexual reproduction is isogammsou**
(c) mostly diploid during it lifecycle (d) lack chitin in their cellurer

12. All of the following condition of weather help the spread of late blight of potato except
(a) Damp **(b) cloudy** (c) windy (d) cool

13. The storage product produced by pyrenods of euglena is
(a) Starch (b) Glycogen **(c) paramylum** (d) all

14. All are characters of diatoms except
(a) Mostly marine (b) lack flagella (c) vegetative cell diploid (d) silica impregenated walls

15. Which of the following in the life cycle of plasmodium
(a) sporozite **(b) ookinet** (c) merozite (d) gametocyte

D. Match the organisms in column 'A' with their phyla in column 'B' write the correct answer in column 'C'

S.No	Column 'A'	Column 'B'	Column 'C'
1	Trypanosoma	a. sarcodina	1→c mastigophora
2	Amoeba	b. sporozoa	2→a sarcodina
3	Plasmodium	c. mastigophora	3→b sporozoa
4	Myxobolus	d. ciliate	4→e emidospora
5	Paramecium	e. emidospora	5→d ciliate

E. Write short answer.

Q 1. Write the names of five phyla of section protozoa.

Ans. (1) mastigophora (Trypansoma)
(2) saccodina (naked and shelled amoebas)
(3) sporozoa (plasmodium)
(4) cnidospora (myxobalus)
(5) Ciliate (paramecium)

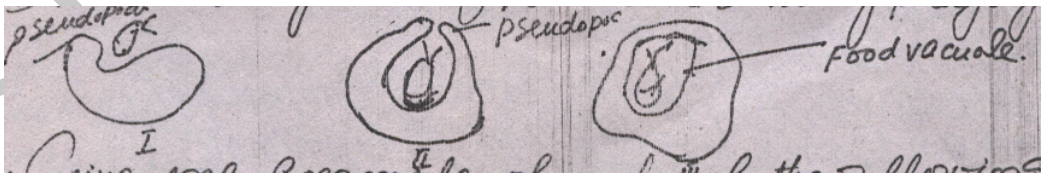
Q 2. What diseases are caused by trypanosome and entamoeba histolytica?

Ans. Trypanosome cause African sleeping sickness a never us disease and entomoeba histolytica is the cause of amoebic dysentery a disease of the cells that line human colon.

Q 3. Write briefly about mastigophora?

Ans. Mastigophora is phylum of section they include those protozoans which possess flagella as their locomotory organs. They are also called zoo flagellates which means that those animal like protest which bear flagella. Examples are Trypanosoma gambiense which is the cause of African sleeping sickness a disease of the nervous system. The parasite spread through blood sucking flies and invade nervous system causing lethargy and finally death.

Q4. Draw a diagram of amoeba showing phagcytosis.



F. Each question has five options. Double encircle the correct option.

1. amoebas move and obtain food by
(a) Plasmodium (b) flagella (c) cilia **(d) pseudopodia** (e) gametangia
2. The sexual process exhibited by most ciliates is called
(a) oogamy (b) binary fission **(c) conjugation** (d) fertilization (e) zygote

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3. Parasitic sporozoans that form spores at some stage in their life belong to which group.
   (a) Ciliate (b) actinopods (c) diatoms **(d) apicomplexans** (e) zoofleagellates
4. Algae which have shells is composed of two halves that fit together like petridish belong to
   (a) Brown algae **(b) diatoms** (c) euglenoids (d) green algae (e) red algae.
5. Algae in which body is differentiated in to blades stapes and hold fast belongs to
   (a) Golden algae (b) diatoms **(c) kelps** (d) euglenoids (e) green algae
6. Chlorophyll 'a' chlorophyll 'b' and carotenoids are found in
   (a) Brown algae, Golden algae, and diatoms
   (b) Green algae, Golden algae and Euglenoids
   (c) Green algae, eudlenods and plants
   (d) Red algae, euglenods and brown algae
   (e) Red algae, golden algae and plants.

7. The feeding stage of a slime mold is called
   (a) Mycelium (b) pseudopodium (c) hyphae **(d) plasmodium** (e) rhizoids
8. Cell wall in oomycetes is chemically composed of
   (a) Cellulose (b) chitin (c) proteins (d) lignin's
   (e) Proteins and some carbohydrates.

Short questions

Q 1. Write two characteristics of each of the following group.

Ans. (A) Protozoa:

(1) Protozoans are animal like protests which include all unicellular forms.
(2) Most ingest their food by endocytosis.
(3) They include parasitic forms which causes serious diseases e.g. Trypansoma, dysentery, plasmodium cases malaria.

(B) Dina flagellates

(1) Dina flagellates are plant like protests mostly unicellular and found in marine habitat.
(2) The cell is covered with shells of the inter locking cellulose.
(3) the are the cause of red tide, because of their excessive population in marine water imparting orange red or brown colour to water

(C) Diatoms

(1) Plant like protests mostly unicellular and lack flagella
(2) The cell wall consists of two shells which fit together like a petridish. They are the major producer of marine and in food chain.

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