

## KEY

### CHAPTER - 6

#### Reproduction – The Generating System

- I. 1. 1) Around the developing embryo three layers are present.  
 2) The outermost one is known as chorion.  
 3) The inner most one is known as amnion both chorion and amnion protect the foetus/embryo from physical shocks.  
 4) Placenta is another layer formed by the cells from the embryo and the mother.  
 5) This layer formed at around 12 weeks of pregnancy and becomes an important structure for nourishment of the embryo.  
 6) Under normal conditions there is no direct flow of blood from mother to the young.  
 7) The blood systems of the two are separated by thin membranes made up of cells that allow an exchange mainly by diffusion of oxygen, CO<sub>2</sub> and nutrients, waste materials.
2. 1) Continuation of life starts from cells either those of the general body of the gametes.  
 2) Cell arises from the pre-existing cells through cell division.  
 3) The characters of the parents are inherited through chromosomes which participates in the cell division.  
 4) In cell division, the cell divides into two halves with equal number of chromosomes which are similar parent cell and are diploid in nature all the pollen grain.  
 5) The stamens contains some sac like structures at its head containing small ball like structures. These are called pollen grains.  
 6) The pollen grains contain male gametophyte.  
 7) These pollen reach the stigma and form pollen tube. Finally the male gametes are released into the embryo sac and fertilization occur to form zygote.
3. Menstrual cycle occurs in two stages. They are :  
 1. Proliferative stage    2. Secretory stage  
 1) Menstrual cycle occurs once in 28 to 30 days.  
 2) During menstrual cycle entire female reproductive system especially ovary and uterus undergo changes in anticipation of fertilization and pregnancy.  
 3) During the first 12 to 14 days of the cycle, ovum development and production is seen.  
 4) At the same time interval development of reproductive parts occur.  
 5) The second half of the menstrual cycle occurs in the later 14 to 16 days.  
 6) During this period developed internal tissues of uterus and ovary are thickened. They wait for carrying fertilized embryo in the name of pregnancy.

7) If this does not occur by 26<sup>th</sup> day in the internal tissues of reproductive organs are detached and expelled.

8) Expulsion of detached tissue and blood concludes one menstrual cycle.

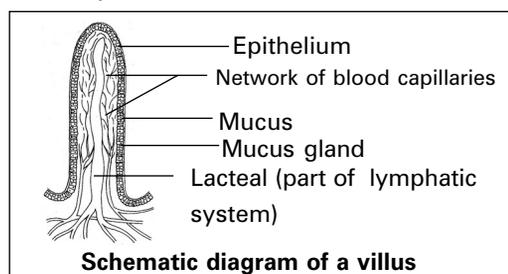
- 4) 1) How does vegetative propagation take place ?  
 2) Are new varieties produced by this method ?  
 3) What is the use of layering and grafting ?  
 4) How are the alternative flower plants produced.  
 5) Give examples for vegetatively propagated plants ?

- II. 1) B      2) C      3) A      4) A      5) A  
 6) D      7) C      8) C      9) C      10) C  
 11) C      12) C      13) A      14) D      15) A  
 16) D      17) D      18) D      19) A      20) C

### CHAPTER - 7

#### Coordination in Life Processes

- I. 1. 1) Peristalsis is involuntary action and under the control of autonomous nervous system.  
 2) The wall of oesophagus is made up of two kinds of smooth muscles. The circular and the longitudinal muscles.  
 3) The contractions of circular muscles result in narrowing of the oesophagus just behind the bolus and the food is squeezed downwards.  
 4) The contractions of longitudinal muscles in front of the bolus widen the tube and bolus moves forward.  
 5) Contraction and relaxation of these muscles bring in a wave like motion that propels the food bolus into the stomach.
2. 1) We should see that the food or diet contains all the necessary nutrients.  
 2) Churning the food slowly alimentary canal for easy digestion, process of absorption and defecation.  
 3) Drink plenty of water.  
 4) Do not to sleep immediately after intake of food.
3. 1) End products of digestion are finally absorbed in the walls of small intestine.  
 2) From here digestive system needs co-ordination with circulatory system.  
 3) Glucose moves into the cells of intestinal mucosa pressured by diffusion and active transport.



- 4) 1) Exit of stool is involuntary in children and voluntary in adults.  
 2) Smelly yellowish fecal mass is called as stool.  
 3) These are two muscular layers helping the exit of stool.  
 4) One that is under involuntary control and other is under voluntary control.  
 5) These muscular structures help in opening and closing of the aperture of the canal which are called as anal sphincter.
- II. 1) B    2) D    3) B    4) B    5) D  
 6) C    7) C    8) C    9) B    10) A  
 11) B    12) B    13) A    14) D    15) A  
 16) A

### CHAPTER - 8

#### Heredity - From Parent to Progeny

- I. 1. The study of evolution reveals one change occurred initially is used to perform other function. For example, initially feathers were evolved for warmth, later they were adapted for flight.
2. Any change in somatic cells cannot be passed to DNA of germ cells. Hence these traits are not inheritable.
3. **Darwin's theory of evolution in a nutshell :**
- 1) Any group of population of an organism contains variations and not all members of group are identical.
  - 2) Variations are passed from parent to offspring through heredity.
  - 3) The natural selection over abundance of offspring leads to a constant struggle for their survival in any population.
  - 4) Individual organisms with variations that help them to survive and reproduce tend to live longer and have more offsprings than organisms with less useful feature.
  - 5) The offsprings of survivors inherit the useful variations, and the same process happens with every new generation until the variation becomes a common features.
  - 6) As the environment changes, the organism within the environment adapts and changes to the new living conditions.
  - 7) Over a long period of time, each species of organism can accumulate so many changes that it becomes a new species, similar to, but distinctly different from the original species. All species on the earth arise in this way.
  - 8) Evolution is a slow and continuous process.
4. i) Out of a pair of contrasting characters present together only one is able to express itself while the other remain suppressed is known as law of dominance.
- ii) I will ask following questions to know more about law of dominance :

- a) Who proposed law of dominance ?
- b) Which plant Mendel took for his experiments ?
- c) Why he (Mendel) took pea plant for this experiments ?
- d) How many contrasting characters he choose in a pea plant ?
- e) How can you correlate law of dominance in daily life situation ?
- f) Tall / dwarf - which one is dominant character ?

(You can add some more questions related to concept .....)

- II. 1) A    2) C    3) B    4) A    5) A  
 6) C    7) B    8) B    9) B    10) A  
 11) C    12) B    13) C    14) C    15) C  
 16) A    17) D    18) D

### CHAPTER - 9

#### Our Environment - Our Concern

- I. 1. 1) Environmental movements are not only the rallies and dharnas.
- 2) The activities listed here also the part of environmental movement, they are saving a tree from cutting, giving medical assistance to suffering dog or a bird, preventing waste materials from entering a fresh water pond or pot etc.
- 3) And also growing trees in the school and public places. Keeping the surroundings neat and clean.
2. 1) Cycle is the good vehicle for environment.
- 2) Due to the increase in population, the number of vehicles has increased. As we are using the fossil fuels for vehicles, are going to deplete.
- 3) Keeping in view of this, we have to walk shorter distance and we have to use bicycles. As a result we can save the fossils fuels and become healthy also.



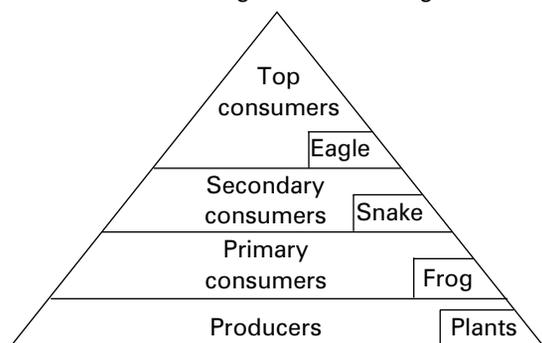
3. The person who wants to save the environment should know the following :
- 1) Reduce    2) Reuse    3) Recycle    4) Recover
- 1) Reduce :** Saving water, by repairing leaky taps and avoiding a shower and switching off unnecessary lights and fans.
- 2) Reuse :** The things that can be reused are preferred than use and throw articles. This would save plants and minimise the pollution.

**3) Recycle :** It is important one we can recycle the thrown away materials and can be utilized. Mainly plastic will be recycled. But it should be done properly.

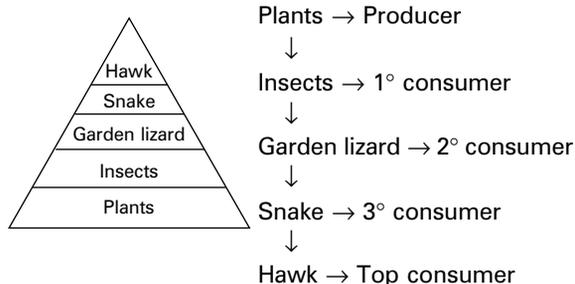
**4) Recover :** The principle of recover plays a major role in solid waste management. Here the solid waste is converted into resources like electricity, compost, heat etc.

**4. Example 1 :** In any food chain four different levels are present.

Plants → Frog → Snake → Eagle



**Example 2 :**



- II. 1) B    2) C    3) C    4) A    5) B  
 6) A    7) B

### CHAPTER - 10

#### Natural Resources

- I. 1. 1) We can manage the biodiversity in our school.  
 2) First we will make a map of our school.  
 3) By studying it we can identify various plants, insects and small animals like squirrels etc., growing in our school.  
 4) We will mark the details in the map and note down the details in a notebook.  
 5) By dividing ourselves into various groups we will take care of flora and fauna.  
 6) We will water the plants daily.  
 7) We will provide proper protection to both flora and fauna.  
 8) Thus we can manage a resource.

2. 1) We have to "reduce" the waste materials. Because if we dispose the waste materials in soil, all materials are not degradable like plastic, glass etc., and some material produce harmful effects like batteries, mercury lights, torch light cells etc.  
 2) Better use cooker to cook food and keep lid on cooking vessels during cooking do not over cook, save the time as well as fuel.  
 3) Use 'Recycle Material' like paper plates, leaf plates, paper glasses, steel and indalium etc.  
 4) Use small burner than bigger one which helps in low consumption of fuel.  
 5) It is better to travel in metro train or bus instead of personal vehicles. It saves fuel as well as reduces smoke into atmosphere.  
 6) Stop engine at traffic signals and traffic jams.

Each liter of petrol produces CO<sub>2</sub>, 2 <sup>1</sup>/<sub>2</sub> times to its weight.

3. Modern technology is practically used for transplanting the trees in the places of destructed ones. Governments use helicopters to spread the genetically modified, timber giving tree seeds on the hillock areas. This is very good idea to keep cool climate on hill side.

Not only depending on forests for plant products but also plant the trees in selective areas recognised by governments / local authorities.

The plant species which are developed through tissue culture or cloning may have desirable characters such as timber, fruits, seeds, gums, latex etc. Such plants are used in the areas for transplantations.

4. **Measures that should be taken to conserve oil are :**

- 1) Reducing oil spills.
- 2) Car pooling.
- 3) Using public transportation.
- 4) Walking or Cycling instead of using bike/car.
- 5) Using organic fertilisers.
- 6) Depending on solar energy for boiling, cooking etc.
- 7) Reducing oil based packagings and bags.
- 8) Using renewable energy resources.

**Consequences of not conserving oil :**

- 1) All the oil resources may be exhausted.
- 2) We may not get any oil for running vehicles. So we can't travel to other places.
- 3) We can't get any by-products from oil like fabrics, soaps, tar, kerosene etc.

- II. 1) A    2) A    3) D    4) A    5) D  
 6) B    7) C    8) A    9) D    10) A  
 11) A    12) B    13) B    14) A    15) C  
 16) A    17) D

