



# BIOLOGY

SAMPLE BOOK



# BIOLOGY



I'm the  
**Intelli Kid**

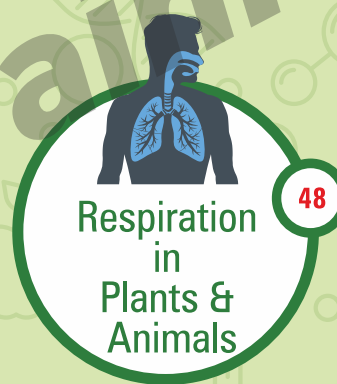
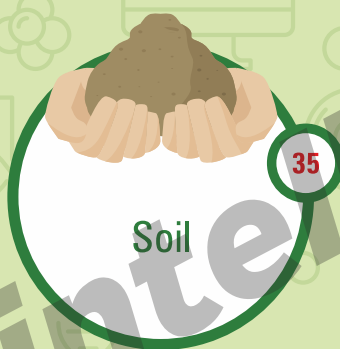
and  
I'm becoming the  
**Best Version**  
of myself with





# INDEX

GRADE-7






Experiential Experimental Edutaining



# I AM PROGRESSING

(Tick mark the columns after achieving the Learning Milestones)



TOPIC	1st Learning	Exercise Solving	1 <sup>st</sup> Revision	2 <sup>nd</sup> Revision
 Nutrition in Plants & Animals				
 Weather, Climate & Adaptation				
 Soil				
 Respiration in Plants & Animals				

# BIOLOGY

SAMPLE THEORY

# CHAPTER 1

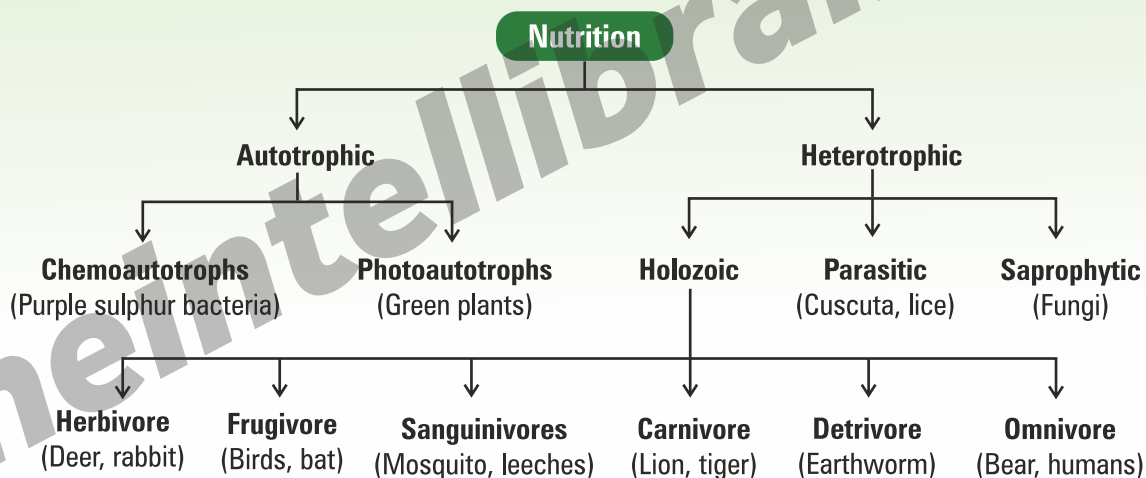
## NUTRITION IN PLANTS & ANIMALS

### INTRODUCTION

- All living organisms require food to grow, repair damaged parts of their bodies and get the energy to carry out life processes.
- In both plants and animals, the basic component of food are nutrients like carbohydrates, proteins, fats, vitamins and minerals.
- Plants can make their own food themselves but animals including humans cannot. Animals get ready-made food from plants or animals. Thus, humans and animals are directly or indirectly dependent on plants.

### NUTRITION

- Nutrition is the process of intaking as well as utilization of food. Nutrition is of mainly two types :



- **Autotrophic Nutrition** : It is a mode of nutrition in which organisms are able to build up their own organic food from inorganic raw materials with the help of energy.
  - (A) **Chemoautotrophs** : These organisms utilize chemical energy for preparing their food. E.g.  $H_2S$  used by sulphur bacteria.
  - (B) **Photoautotrophs** : These organisms use light energy for the synthesis of food. E.g. Green plants.



- **Heterotrophic Nutrition** : It is a mode of nutrition in which organisms depend upon other organisms for food because they cannot prepare their own food.

- Herbivores** : Animals which eat only plants. E.g. Cow, goat.
- Carnivores** : They feed on flesh of other animals. E.g. Lion, vulture.
- Omnivores** : They feed on plants and animals both. E.g. Dog, human.
- Detritivores** : They feed on detritus or dead organic remains. E.g. Earthworm.
- Sanguivores** : They feed on blood. E.g. Leech, female mosquito.
- Frugivores** : They feed on fruits. E.g. Parrot.
- Insectivores** : They feed on insects. E.g. Bats, house sparrow, pitcher plant.

## PHOTOSYNTHESIS

- **Photosynthesis** is the process of synthesis of food (glucose) from carbon dioxide and water using solar energy by chlorophyll pigments.



## Chemical Equation of Photosynthesis

- Photosynthesis takes place in the green parts (mostly in leaves) of the plant because of presence of chlorophyll pigment inside their cells. Therefore, leaves are the food factories of plants.

- **Requirements for photosynthesis** : Green plants require four things to prepare their own food.

- **Sunlight** : Sun is the natural source of sunlight. Plants utilize the light in the visible region of solar spectra. The light absorbed by the plants is from 400 nm to 700 nm i.e. visible light spectrum.
- **Maximum photosynthesis occurs in red light and minimum in green light.**

- **Chlorophyll** : It is the green pigment present in chloroplast. They are found in green leaves in the maximum amount as well as in other green aerial parts of plant. They trap solar energy from sunlight. Photosynthesis will not take place without chlorophyll.



Structure of Chloroplast

# BIOLOGY

## SAMPLE EXERCISE





# EXERCISE

GRADE-7

## Weather, Climate & Adaptation



**Directions:** Solve the following multiple choice questions by choosing the most appropriate option.

### WEATHER, CLIMATE

**1. Humidity is measured by using**

- (1) Thermometer      (2) Rain gauge      (3) Hygrometer      (4) All of these

**2. Rain gauge is used to measure**

- (1) humidity      (2) rainfall      (3) temperature      (4) All of these

**3. The climate of a place depends on**

- (1) latitude      (2) altitude  
(3) distance from the sea      (4) All of these

**4. At which time of the day is the maximum temperature found ?**

- (1) Morning      (2) Afternoon      (3) Evening      (4) Night

**5. In weather all the changes are caused by**

- (1) Sun      (2) wind speed      (3) humidity      (4) rain fall

**6. The primary source of energy is**

- (1) air      (2) Earth      (3) rain      (4) Sun

**7. Every day the weather is recorded by**

- (1) scientists      (2) meteorologists      (3) ophthalmologists      (4) foreigners

**8. Time taken by average weather pattern is**

- (1) 20 years      (2) 50 years      (3) 30 years      (4) 75 years

**9. Which place in India has high temperature during most part of the year ?**

- (1) Andhra Pradesh      (2) Rajasthan      (3) Jammu & Kashmir      (4) Delhi

**10. The place which receives very little rain fall in India is**

- (1) Andhra Pradesh      (2) Kerala      (3) Rajasthan      (4) Madhya Pradesh

**11. Which region is wet in India ?**

- (1) North west      (2) South west      (3) North east      (4) South part

## ADAPTATION

12. The animals do not compete for \_\_\_\_\_  
(1) mates (2) space (3) food (4) light
13. Which of these is an adaptation of a polar bear ?  
(1) It has a thick coat of fur (2) It produces little urine  
(3) It does not sweat (4) It can store water
14. Which of the following allows a camel to survive in the desert ?  
(1) It has a thick coat (2) It can store water  
(3) It is a good swimmer (4) It is white in colour for camouflage
15. What determines whether an individual animal or a plant can survive ?  
(1) Whether it can eat the most (2) Whether it is adapted to its environment  
(3) Whether it is tall (4) Whether it is large
16. Foxes adapt to the desert climate with the help of  
(1) long ears (2) long nose and tail  
(3) Both (1) and (2) (4) presence of thick coat
17. The hump of the camel is a reservoir of  
(1) fatty tissue (2) water (3) milk (4) All of these
18. Which of these animals possesses blubber under its skin ?  
(1) Camel (2) African elephant  
(3) Polar bear (4) Polar bear
19. Anguiles remove excretory waste in the form of  
(1) urea (2) uric acid (3) ammonia (4) None of these
20. Many desert animals  
(1) undergo hibernation (2) are nocturnal  
(3) live on trees (4) are mostly invertebrates
21. Which of the following birds show migration ?  
(1) Snow goose (2) Arctic tern (3) Ptarmigan (4) Both (1) and (2)

