



# Human System and Sense Organs

All the living beings possess various systems to perform vital life processes. These systems work in co-ordination with sense organs. These sense organs receive perceptions and systems of the body act accordingly.

## Human Systems

The human body has structures like mouth, nose, ear and limbs etc. These different structures are the parts of different systems in the human body.

*The main systems of the human body are as follows*

### 1. Digestive System

This system helps man to make use of food they eat. It comprises of a food pipe which has two openings. Its first opening is called mouth and works for food intake while its last opening is called anus. It works as an exit window for undigested food.

### 2. Respiratory System

- It allows exchange of gases between cells of human body and the environment.
- Oxygen gas is taken in (inhaled) and carbon dioxide is given out (exhaled) of the body.
- This work is carried out through lungs.

### 3. Circulatory System

- It helps to circulate blood in whole human body with the help of heart and blood vessels.

- Through this food, oxygen, CO<sub>2</sub> and other important chemicals/materials are transported to different parts of the body.

### 4. Excretory System

- It helps to eliminate the human body's waste in the form of urine mainly.
- Its main organs are kidney, liver and skin.

### 5. Muscular System

- It helps human body to perform various functions and also provides support and shape by coordinating with skeletal system.
- Muscular system along with skeletal system helps man for locomotion and movement.

### 6. Skeletal System

- It gives shape and support to the human body.
- It comprises of bones and muscles.

### 7. Nervous System

- It controls the working of internal organs of body.
- It also helps in sensing, thinking and in responding to any sensation.
- It includes brain, spinal cord and nerves.

## 8. Reproductive System

- This system is comprised of male and female reproductive organs in man and woman, respectively.
- Young ones (babies) are born with the help of reproductive system.

## Sense Ograns

- Senses allow us to observe and understand the world around us.
- Infact, these help us to
  - ♦ See through eyes ♦ Smell through nose
  - ♦ Taste through tongue ♦ Hear through ears
  - ♦ Feel through skin

Let us explore these senses in different animals one by one.

### 1. Nose

Animals	Functions of Smell
Ants	■ As the ant moves, it leaves a smell on the ground. The other ants follow this smell to find the way.
Mosquitoes	■ Find their target through their smell and body heat.
Silkworm	■ Finds female worm by her smell (forming).
Dogs and tigers	■ Maintain their territory with their urine's smell.
Humans	■ They can differentiate between a good or bad smell.

### 2. Eyes

Animals	Functions of Eyes
Birds	■ Estimate distance when both eyes are focused on an object. ■ Increase range of vision when eyes focus on two different things.
Animals that awake at night	■ See things in black and white colour. ■ Helps to see objects in dark.
Animals that awake in daytime and humans	■ See colours ■ Difficult to see in extreme dark.
Tiger	■ A tiger can see six times better at night than most of us humans. ■ It helps them to hunt during night.

### Eyes of Birds

- Eyes are fixed and cannot move.
- Few birds have very sharp vision and they can see far objects, e.g. Kites, eagle, vultures, etc.
- In owls, eyes are located in front of head.

- In pigeons, crow, sparrow, eagle, etc., eyes are located on either side of the head.

### 3. Ears

Animals	Functions of Ears
Snakes	■ They have internal ears, which help to feel vibrations on ground.
Birds and other animals like langur	■ Different sounds are produced to give alarm calls.
Fishes in Sea	■ They can sense Tsunami waves.
Elephant	■ Their big ears help to fan their body.
Dolphins	■ They produce different sounds to communicate and to find their food.
Tigers	■ Their whiskers can sense vibrations in air. ■ They can move ears in different directions and this helps to catch the sounds from all around. ■ Tigers make different sounds for different purposes like when it is angry or to call out to a tigress. It can also roar or snarl.

### 4. Skin

Animals	Functions of Skin
Birds	■ Body is covered by feathers. It helps them to fly.
Frogs	■ Helps to breathe.
Humans	■ Helps to maintain body temperature.

*In response to different temperature, animals show following types of responses*

- Summer sleep** Many animals avoid the heat period by undergoing summer sleep, e.g. Crocodile. This is called aestivation.
- Winter sleep** It helps to avoid the extreme cold conditions, e.g. Sloth, lizards, etc. This is called hibernation.

### 5. Tongue

Animals	Functions of Tongue
Human	■ Helps to taste food.
Dogs and cats	■ Helps to clean their fur and body.
Frogs	■ Helps to catch food.
Snakes	■ Helps them to smell chemicals in their surroundings.



# Practice Exercise

1. The system of human body which is related to food is
  - (a) respiratory system
  - (b) digestive system
  - (c) nervous system
  - (d) None of the above
2. Food pipe and anus are the part of which system?
  - (a) Nervous system
  - (b) Excretory system
  - (c) Digestive system
  - (d) None of the above
3. Which of the following systems brings about exchange of gases?
  - (a) Respiratory system
  - (b) Excretory system
  - (c) Digestive system
  - (d) Nervous system
4. The function of respiratory system is
  - (a) to inhale  $O_2$
  - (b) to exhale  $CO_2$
  - (c) Both (a) and (b)
  - (d) None of these
5. The skeletal system is made up of
  - (a) bones
  - (b) muscles
  - (c) Both (a) and (b)
  - (d) None of these
6. The main function of nervous system is
  - (a) to think
  - (b) to react
  - (c) to control internal organs
  - (d) All of the above
7. The sense of ..... helps ants to move in a line.
  - (a) sight
  - (b) smell
  - (c) taste
  - (d) hearing
8. Dogs can mark the presence of other dogs in their area. They do this by
  - (a) smelling urine
  - (b) smelling latrine
  - (c) Both (a) and (b)
  - (d) barking
9. Mosquitoes can sense ..... of host.
  - (a) body temperature
  - (b) touch
  - (c) sound
  - (d) sight
10. Dogs are used to catch criminals due to their strong sense of
  - (a) sight
  - (b) hearing
  - (c) smell
  - (d) All of these
11. Sense of smell helps a silkworm to
  - (a) find female
  - (b) search food
  - (c) communicate
  - (d) mark its area
12. Tigers mark their area using
  - (a) saliva
  - (b) sweat
  - (c) urine
  - (d) None of these
13. Eyes are bigger than the size of head in
  - (a) elephant
  - (b) tiger
  - (c) birds
  - (d) snakes
14. Birds with sharp vision is/are
  - (a) kites
  - (b) eagle
  - (c) vulture
  - (d) All of these
15. What is true for animals living in dark caves?
  - (a) They cannot see anything
  - (b) They do not see colours
  - (c) They can see all colours efficiently
  - (d) They can only see red, blue and green colours
16. In which of the following, eyes are located in front of the head?
  - (a) Owls
  - (b) Eagle
  - (c) Pigeon
  - (d) Kites
17. In pigeons
  - (a) eyes are not functional
  - (b) eyes are located on either side of head
  - (c) eyes are present in front of head
  - (d) eyes are not fixed
18. How many times a tiger can see better than human at night?
  - (a) 5 times
  - (b) 6 times
  - (c) 8 times
  - (d) 10 times
19. Why do birds turn their heads to see around?
  - (a) Because their body is small
  - (b) Because they do not have neck
  - (c) Because their eyes are fixed
  - (d) Because their head is very small

26. In which animal, ears are not seen clearly?  
(a) Dogs (b) Birds  
(c) Monkey (d) Humans
27. Aestivation is  
(a) summer sleep  
(b) winter sleep  
(c) escaping predation  
(d) searching food
28. Sloths exhibit  
(a) hibernation (b) winter sleep  
(c) Both (a) and (b) (d) aestivation
29. Minimum sleeping hours are seen in  
(a) cow (b) python  
(c) cat (d) giraffe
30. Vibrations in air can be sensed by the ..... of tiger.  
(a) eyes (b) ears  
(c) whiskers (d) tail
31. Why we do not see any lizard in the house during winter?  
(a) They cannot survive and die  
(b) They go to winter sleep  
(c) They get eaten by other animals  
(d) None of the above

# Answers

[illegible]