BIOLOGY
DEPARTMENT
STIRLING SCHOOLS

# BIOLOGY 9

## Question Bank

## Grade




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## Dear Students:

Welcome to this question bank designed specifically for Grade 9 Biology! This resource is here to help you assess your understanding of the topics covered in your biology textbook and prepare you for the style and types of questions you may encounter in the Ministry exams.

However, it is important to remember that the primary source of your learning is the **biology textbook**. The question bank serves as an additional tool to test your knowledge and give you practice with different types of questions, including previous Ministry exam questions and other possible questions for future exams.

***By using this question bank, you will:***

- ✓ Test your comprehension of the concepts taught in class.
- ✓ Identify areas for improvement where you might need to revisit the textbook.
- ✓ Get familiar with the format and structure of Ministry exam questions.

**I encourage** you to study the textbook thoroughly, as it contains all the foundational knowledge needed to succeed in biology. Once you've grasped the content, use this question bank to challenge yourself and gain confidence for the exams.

**Remember, understanding comes first, and practice follows.**

**I wish you the best of luck in your studies!**

# Chapter { 1 }

## Skeletal System Question Banks

Chapter 1

# SKELETAL SYSTEM

## Definitions:

1. **Osteocytes:** The bone tissue is composed of star-like bone cells called osteocyte.

2. **Haversian canal:** It is a central canal in the bone through which blood vessels passes and bone cells are arranged in the form of the circles around this canal.

3. **Periosteum:** It is a membrane which covers the outer part of the bone. It contains nerves and blood vessels which nourish the bone.

4. **Fontanelle:** In child's skull, there are spaces which are located between the bones of skull and they are covered with a fibrous cartilaginous tissue. These spaces facilitate the process of birth and they are called fontanelle.

5. **Foremen magnum:** there are relatively big hole at the bottom of cranium and this hole is called foramen magnum through which the spinal cord passes.

6. **Joint:** The meeting point of two bones in the body is called as joint.

7. **Tendon:** they are non-flexible firm fibrous which connect muscle with bone.

8. **Ligament:** They are strong fibrous bands, which connect the bones with one another. They are flexible until a certain degree. Thus, they allow the bones to move and they protect the joints from disarticulation.

9. **True ribs:** are the first seven pairs of ribs, which are directly connected with the sternum by way of small cartilaginous pieces at the front side

10. **Fales ribs:** they are three pairs of ribs which not connected to the sternum directly, firstly the connect with the cartilage of the seventh rib and then they are together joined to the sternum by small cartilaginous pieces.

11. **Sternum:** It is a flat bone which consists of three cohesive bones. It is located in front of the chest and from the sides, the true ribs are joined to the sternum by cartilaginous pieces.

12. **Clavicle** is a thin arch-like bone and its position in the body can be felt since it extends between the scapula and the top of sternum.

13. **Cartilages:** They are white colored, transparent and strong structures. They can bend without breaking and they cover the head of bone.

14. **Dentine:** is the basic substance of a tooth and it is very solid substance because it contains calcic materials. A tooth is made up of dentine.

15. **Fracture:** Fracture is the division of bone to two parts or more. It takes places as a strong sudden contraction of muscles or when the bone is exposed to a direct external shock as the fall of hard body on the bone or when a bullet hits it.

16. **Rickets:** Rickets can be seen in children between 1-2 years. Deficiency of vitamin D and not exposing to sunlight are causes of this disease.

17. **Dis-articulation:** it's the separation of two bones at their joint, either naturally by way of injury or by a surgical operation

## ➢ Fill in the blanks correctly?

1. The human body cannot keep its balance and harmony of its movement without having a hard support to its soft parts are jointed. This support is called ……
2. There is strong link between the work muscle and bones, which is called as ……
3. The bone tissue is composed of star-like bone cell called ……
4. Osteocytes are arranged in the form of circles around a central canal called as ……
5. The body of femur bone is covered by an external membrane which contain nerves and blood vessels to nourish the bone, this membrane is called as ……
6. Spongy bone is not surrounded by periosteum but instead of periosteum, a smooth half-solid layer called as …… covers it.
7. Chemically, a bone is consists of two major kinds of materials they are: …… And ……
8. The organic materials of bone are colloidal proteins known as …… and mucous-like substance called as ……

9. There is a relatively big hole at the bottom of cranium this hole is called …… through which the spinal cord passes.
10. In child's skull there are spaces called as ……..
11. The skeletal system is divided into two main parts they are:……skeleton and……skeleton.
12. The joints between bones of cranium are called ……..
13. A tooth consist of three regions …… , ……and……
14. A tooth is made up of a basic substance called ……
15. Crown is covered with a hard shining white external layer called ……..
16. Root is covered with a rough brown solid substance called as ……..
17. Inside the tooth, there is a cavity called ……
18. There are a branched dental nerve and branched blood vessels therefore we can feel the pain, cold, heat and pressure. They enter the tooth through a hole called …….. located at the bottom of the root.
19. The length of vertebral column is …….. in an adult.
20. Vertebral column composed of …….. bone
21. The vertebral column consists of 33 vertebrae, each one is called ……
22. Each vertebra consists of following parts ……, …… and ……..
23. There is a foreman (hole) between arch and centrum. This hole is called ……
24. When vertebra arraigned vertically, a tube is formed from their rings and this tube is called as …….. spinal cord passes through this hole.
25. One of them is in the middle and this process stands in front of the centrum (body) called …….. and muscles connect to this part.

**26.** There are two lateral processes called …… For connection of ribs.

**27.** The first cervical vertebra is called ……

**28.** The second cervical vertebra is called ……

**29.** Sacral region is consisting of five cohesive vertebrae which constitute a single bone called ……

**30.** Coccygeal region is made up of four vertebrae which are cohesive one another and they make a single bone called ……

**31.** Thoracic cage consists of …… and……

**32.** The First seven pairs of ribs are directly connected with the sternum by small cartilaginous pieces. These ribs are called as ……

**33.** There are three pairs of ribs which not connected to the sternum directly. firstly, the connect with the cartilage of the seventh rib and then they are together joined to the sternum by small cartilaginous pieces. These ribs are called as ……

**34.** The last three pairs of ribs are not jointed to anything at the front therefore, they are called as ……

**35.**…… it's a long level structure which consists of three cohesive bones and it is found in the front of the chest.

**36.** Bones of the limbs are joined to the axial skeleton by means of two girdles: …… And …… respectively.

**37.** Pectoral girdle is consisting of two bones in each side they are: …… and ……

**38.**…… is a level triangle-like bone, its back surface form a long process which extends to backside. But the front surface is soft and somewhat concave.

**39.**…… is a thin arch-like bone and its position in the body can be felt since it extends between the scapula and the tope of sternum.

**40.** Upper limb of human is composed of: …… , …… and ……

**41.** The joint between humerus and forearm is called as …….

**42.**……. is the joint between humerus and forearm.

**43.** Forearm is consists of two long bones they are: ……. and ……

**44.** Hand is consists of ……. bones.

**45.** Hand is consists of 27 bones, which are divide into three parts they are ……. , ……. and ……

**46.** The fingers are composed of fourteen bones called the ……

**47.** The …… are composed of fourteen bones called the phalanges.

**48.** The …… are composed of fourteen bones called the ……

**49.** Each finger is composed of……. except the thumb which consist of……

**50.** Pelvic girdle consists of two symmetrical halves, each of them is composed of three cohesive bones they are …… , …… and ……

**51.** Lower limbs are made up of …… , …… and ……

**52.** Femur from its upper side is contain a spherical head which enters the acetabular cavity and forms……

**53.** From the bottom femur is articulated with tibia by ……

**54.** Leg Is made up of two bones: one of them is located beside the other one. They are …… and ……

**55.** There is flattened small bone called …… In the front of the knee joint.

**56.** Foot is made of ……. bones.

**57.** Foot is consists of three parts they are …… , …… And ……

**58.**..... is a split of bone (the division of it into two parts or more)

**59.**The joints present in the skull are ..... But joints found between the vertebrae are called.....

**60.**..... Is the separation of two bone at their joint.

**61.**..... they are strong fibrous bands which connect bone one other.

**62.**..... they are non-flexible firm fibrous cord which connects muscles with bone.

**63.**..... they are white colored, transparent and strong structures. They can bend without breaking. They cover the heads of bones.

**64.**..... the meeting points of the bones in the body or it's the connection Between two bones.

**65.**..... this type of joint allows extensive movement, such as rotation and In many directions examples are the joints of shoulder and hip.

**66.**..... this forms the junction of two bones. This type of joint allows movement about one axis. The elbow is an example of this type of joint.

**67.**..... it's the joint of two bones. The junction of the atlas vertebra with the occipital bone is an example of this type of joint.

## Answers:

1. Skeleton
2. Movement system
3. Osteocytes
4. Haversian canal
5. Periosteum
6. Cartilage
7. Organic material and inorganic martial
8. Collagen and mucole
9. Foramen magnum
10. Fontanelle
11. Axile skeleton and appendicular skeleton
12. Immovable joints
13. Crown, root, and neck
14. Dentine
15. Enamel
16. Cementum
17. Pulp
18. Apical foramen
19. 75 cm
20. 33 bones
21. Vertebra
22. Centrum, vertebral arch and processes
23. Vertebral foramen
24. Vertebral canal
25. Spinous processes
26. Transverse processes
27. Atlas
28. Axis
29. Sacrum
30. Coccyx
31. Ribs and sternum
32. True ribs
33. False ribs
34. Free ribs
35. Sternum
36. Shoulder girdle and pelvic girdle
37. Scapula and clavicle
38. Scapula
39. Clavicle
40. Homarus, forearm and hand
41. Elbow joint
42. Three phalanges, two phalanges
43. Ulna and radius
44. 27 bones
45. Carpal bones (wrist), metacarpal bones and phalanges
46. Phalanges
47. Fingers
48. Fingers and phalanges
49. Three phalanges, two phalanges
50. Ilium, ischium and pubis
51. Femur, leg and foot
52. Ball and socket joint.
53. Knee joint
54. Tibia and fibula
55. Patella
56. 26
57. Ankle (tarsal), metatarsals and toes
58. Fracture
59. Immovable joint, movable joints
60. Dis-articulation
61. Ligaments
62. Tendons
63. Cartilages
64. Joints
65. Ball and socket joint
66. Hinge joint
67. Cylindrical joint
68. Immovable joint

| Q/ write the function of the followings? | |
|---|---|
| **Body parts** | **Their functions** |
| **Osteocyte** | Osteocyte secretes ossein which is the solid substance of bones. |
| **Ligament** | Ligament allow the bones to move and at the same time they protect the joints from disarticulation. |
| **Tendon** | Provides the human to move the parts, which are attached to these muscles. |
| **Patella** | Protect the knee |

| Q/ write the locations of the followings?<br>Q/ write the places of the followings? | |
|---|---|
| **Parts** | **Their locations** |
| **Haversian canal** | It is located in the structure of bone. |
| **Fontanelle** | In child's Skull |
| **Sternum** | Thoracic cage |
| **Clavicle** | Shoulder or pectoral girdle |
| **Scapula** | In back side of the shoulder |
| **Ulna** | Forearm |
| **Radius** | forearm |
| **Tibia** | Infront of the leg under the skin |
| **Patella** | In front of the knee joint |
| **Sacrum** | Vertebral column |
| **Coccyx** | Vertebral column |
| **Immovable joints** | In between the cranial bons |
| **Forman magnum** | At the bottom of skull |
| **Apical foramen** | At the bottom of teeth |
| **Pulp** | Inside teeth |

## ➢ Write the cause (reason) of the followings:

1. **Dentin is a very solid substance in the structure of teeth.**
   Answer: Because it contains calcic materials.

2. **Presence of cartilaginous discs between vertebrae of the vertebral column.**
   Answer: These cartilages enable the vertebral column to bend to different sides, facilitate the movement of vertebrae and prevent the friction of vertebrae.

3. **Presence of the cartilaginous pieces at the front side of the real (true) ribs.**
   Answer: They are important in the process of respiration since they facilitate the movement of the thoracic cage.

4. **Some ribs are called as true ribs.**
   Answer: First seven pairs of ribs are directly connected with the sternum by small cartilaginous pieces. These ribs are called as true ribs.

5. **Some ribs are called false ribs.**
   Answer: because they are not connected to the sternum directly, firstly the connect with the cartilage of the seventh rib and then they are together joined to the sternum by small cartilaginous pieces.

6. **Some bons are called free ribs.**
   Answer: Because they are not jointed to anything in the front

7. **Fibula does not turn around tibia.**
   Answer: Because fibula is thinner than the tibia and the two ends of fibula are connected to tibia.

8. **The vertebral column I delicate at the neck region and wide at sacral region.**
   Answer: it helps human in bearing the heavy head and the upper limbs.

9. **Width of pelvis in human.**
   Answer: it is facilities the balance of trunk on the lower limbs.

10. **The lower limbs are longer than the upper limbs.**
    Answer: it helps human in walking with wide paces.

11. **Presence of bending at the hollow of the foot.**
    Answer: it helps human in walking in a comfortable way, jumping and running easily.

12. **Dis-articulation.**
    Answer: either naturally by way of injury or by a surgical operation.

## ➢ Answer the following questions.

**1-Explain the structure of a long bone (femur).**

The femur bone is made up of a body and two ends. The body is covered by an external membrane which contains nerves and blood vessels to nourish the bone. This membrane is called as periosteum. After this membrane, the compact bone comes. Compact bone is the hardest bone layer and contains bone marrow inside it. The two ends are distinguished from the body of bone by being spongy. Spongy bone is not surrounded by periosteum but instead of periosteum, a smooth half-solid layer called as cartilage covers it.

**2-Explain the chemical structure of bone.**

**organic materials**: The percentage of organic materials is %35. These organic materials are colloidal proteins known as collagen and mucous-like substance called as mucole. Mucole resembles the albumin (white of egg) and it is
important for bone flexibility.

**Inorganic material:** The percentage of inorganic materials is %65. These inorganic materials are phosphate, carbonate, calcium florid, manganese phosphate and sodium chloride (table salt). They are responsible for the hardness of bones.

**3-Explain the structure of a tooth.**

A tooth is made up of a basic substance called dentine which is a very solid substance because it contains calcic materials. Crown is covered with a hard shining white external layer called enamel, whereas the regions of neck and root are covered with a rough brown solid substance called cementum. Inside the tooth, there is a cavity called pulp in which there are a branched dental nerve and branched blood vessels therefore we can feel the pain, cold, heat and pressure. They enter the tooth through a hole called apical foramen located at the bottom of the root.

**4-Explain the structure of typical vertebrae.**

Each vertebra consists of following parts:

**1.Centrum:** is a disc-like flat portion tend to the front part according to their positions in the vertebral column.

**2.Vertebral arch:** is located to the backside of the centrum. There is a foramen (hole) between arch and centrum. This hole is called vertebral foramen. When vertebrae are arranged vertically, a tube is formed from their rings and this tube is called as vertebral canal. Spinal cord passes through this tube.

**3.Processes:** are osseous appendages emerging from the vertebral. One of them is in the middle and this process stands in front of the centrum (body) called spinous process and muscles connect to this part. There are two lateral processes called as transverse processes for connection of ribs. Also, there are two pairs of processes emerging from vertebral
arch articulate the vertebrae one another.

**5-Explain the regions of vertebral column.**

**A. Cervical Region**

It consists of seven vertebrae. The first cervical vertebra is called **atlas**: it is joined to the bottom of the skull and the second cervical vertebra is called **axis**: it is joined to atlas with a long process at the top of it. Through this connection, the head can easily turn and incline.

**B. Thoracic Region**

It is made up of twelve vertebrae. Ribs are joined to this region.

**C. Lumbar Region**

It is composed of five broad vertebrae. Their sides are flat.

**D. Sacral Region**

It consists of five cohesive vertebrae which constitute a single bone called sacrum.

**E. Coccygeal Region**

It is made up of four vertebrae which are cohesive with one another and they make a single bone called coccyx.

**6-Write name of regions in vertebral column and number of bones.**

A. **Cervical Region:** 7 vertebrae
B. **Thoracic Region:** 12 vertebrae
C. **Lumbar Region:** 5 vertebrae
D. **Sacral Region:** 5 vertebrae
E. **Coccygeal Region:** 4 vertebrae

**7-Numerate the components of the upper limbs and the shoulder girdle in human.**

Shoulder or Pectoral Girdle and Upper Limbs

1. **Shoulder Girdle:** It consists of two bones in each side they are:
   a. Scapula
   b. Clavicle
2. **Upper Limbs:** The upper limb of human is composed of:
   a. Homarus
   b. Forearm
   c. Hand

**8-Write names and number of the bones in an upper limb.**

Upper Limbs: The upper limb of human is composed of:
a. Humerus:1
b. Forearm: 2 Ulna and radius
c. Hand: 27 Carpal bones:8 Metacarpal bones:5 Phalanges:14

**9-What are the differences between male and female pelvic.**

1. Bones of pubis in female are lighter than in male
2. Pelvis is wider in female to facilitate the pregnancy period.
3. Pelvis in female is less deep than in male.

**10-Numerous the factors which rapidly of treating the fracture deepens on.**

1. Fracture type which hits bone.
2. The age of the person.
3. Nutrition Taking food rich in vitamins and calcium accelerate the treatment.
4. Treatment method.

**11-What are the specialties of human skeleton.**

1. The balance of the skull over the vertebral column enable to balance the skull over the vertebral column and makes his head high. So, human can see far objects.
2. The vertebral column is delicate at the neck region and wide at sacral region helps human in bearing the heavy head and the upper limbs.
3. Width of pelvis in human, facilitates the balance of the trunk on the lower limbs.
4. The lower limbs are longer than the upper ones, helps human in walking with wide paces.
5. Presence of bending at the hollow of the foot, helps human in walking in a comfortable way, jumping and running easily.

**12- What are the major parts of the skeletal system? What are the characteristics of each?**

1. **Axial Skeleton:** composed of skull, vertebral column and thoracic cage (sternum and ribs).
2. **Appendicular Skeleton:** composed of double bones, which are located on both sides of body. Bones of the limbs are jointed to the axial skeleton by means of two girdles; shoulder girdle and pelvic girdle respectively.

**13- What are the parts of the thoracic cage?**

**Thoracic Cage (chest)** It consists of **ribs** and **sternum.**

**A. Ribs:** Human has 12 pairs of ribs, which are articulately connected with the thoracic vertebrae (12vertebrae) at the back side. But at the front side, the first seven pairs of ribs are directly connected with the sternum by small cartilaginous pieces. These ribs are called as **true ribs**. After that, the three pairs of ribs are not connected to the sternum directly. Firstly, they connect with the cartilage of the seventh rib and then they are together joined to the sternum by small cartilaginous pieces. These ribs are called as **false ribs.** The last two pairs of ribs are not joined to anything at the front. Therefore, they are called as **free ribs.**

**B. Sternum:** It is a long level structure which consists of three cohesive bones and it is found in the front of the chest.

**14- What is fracture? What is the cause of fracture? Which factors affect the rapidity of repairing the fracture?**

**Fracture**: is the split of a bone (the division of bone into two parts or more).

1. It happens after a strong sudden contraction of muscles.
2. It happens when the bone is exposed to a direct external shock
3. It happens when a bone faces a powerful shock or bone decaying because of a disease.

**15- Count the structure supporting the skeletal system?**

**Answer:** Ligaments, Tendon, Joints, and Cartilages

## ➢ What are the symptoms and preventions for rickets?

**Answer:**

**symptoms of rickets.**

1-Retardation in teeth grow, walking and ossification of cranial bones. Also curved legs are one of the symptoms.

2-Patient become nervous and cries much more than other children.

**preventions for rickets?**

1- Mother must breast feeding the child, and if necessary, supporting the nutrition with enough milk.

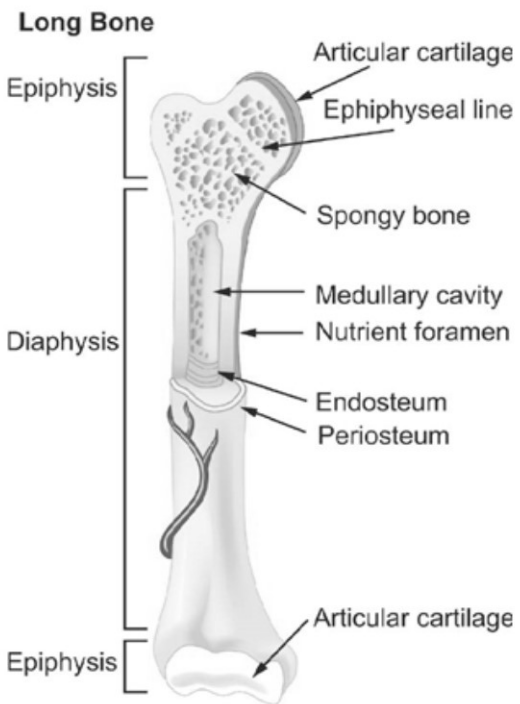
2- Exposing the child to enough sunlight especially in winter. But keep away from too much sunlight in summer.

## ➢ Give an example for each of the followings.

| Structures | Examples |
|---|---|
| Immovable joint | All cranial and facial bones with the exception of the mandible are immovable. |
| Ball and socket joint | Examples include the joint of the shoulder and hip. |
| A bone disease | Rickets |

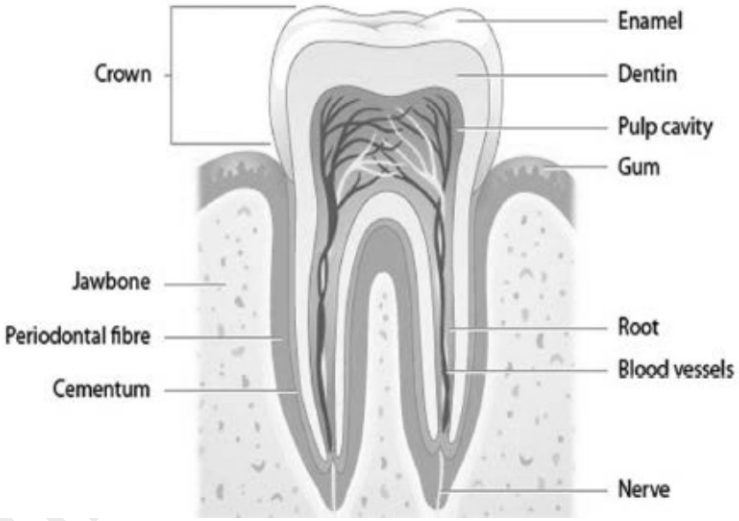
## ➢ Draw the followings:

1. Structure of long bone.



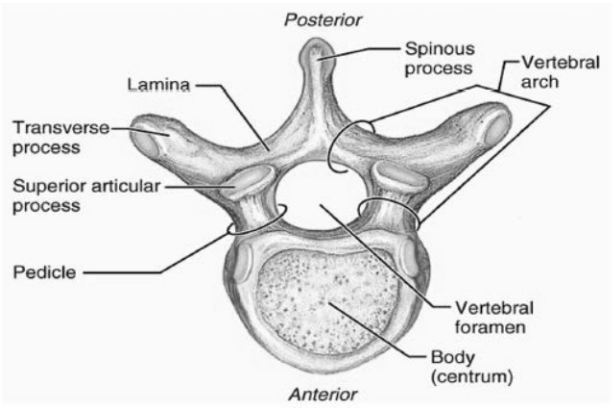

**Practice here**

2. Structure of Teeth.




**Practice**

3. Structure of typical vertebrae.




Practice here

# Chapter { 2 }

# Muscular System Question Banks

Chapter 2

# MUSCULAR SYSTEM

## ➢ Define the followings.

1. **Muscle Fibers:** They are elongated muscle cells, which lie lengthways along the line of muscle contraction.

2. **Muscle fatigue:** The muscles cannot work continuously without stop, only for limited period. But if it is forced, the muscle shows weakness in their ability to contraction and relaxation. So, it becomes harder and this is called as muscle fatigue.

3. **Tendon:** They are non-flexible firm fibrous cords which connect muscles with bones.

4. **Involuntary muscle:** This type of muscles which are not controlled by us (we have no control on their movements). For this reason, these muscles and others which are similar to these muscles, are called involuntary muscles.

5. **Voluntary muscle:** This type of muscles which are under the control of will. For this reason, this muscle and others which are similar to this muscle, are called as voluntary muscles.

6. **Antagonistic:** when a muscle contracts, the other relaxes so that this muscle called as antagonistic.

## ➢ Fill in the blanks correctly?

1. ..... give outer shape of the body and help to perform deferent body movements.
2. Muscles consists of a special tissue known as muscular tissue: this tissue is consisting a specialized cells called .....
3. ..... these muscles are connected with the bony skeleton and they are responsible for the body movement.
4. When your arm is stretched, it becomes longitudinal and pointed. These two conditions show that, this muscle is under your control. For this reason, this muscle and others which are similar to this muscle are called as .....
5. Skeletal muscles consist of many cells called as .....
6. Each cell (fiber) contains bright and dark sections alternatively. This structure gives the cell (and consequently the muscle) striated form when it is examined under the microscope. For this reason, this type of muscle is called .....
7. Ends of each skeletal muscle are connected with a tough cord called .....

8. The number of muscles in human body ..... muscles.
9. The skeletal muscle is the muscle connected with ..... and responsible for .....
10. ..... are found in the walls of the internal organs, such as in the muscular tissue of the bladder, intestines, stomach and uterus.
11. Stomach walls contain a group of muscles which are not controlled by us. For this reason, these muscles are called .....
12. ..... are found in the walls of the heart and they are ..... muscles that they are not under our control.
13. Cardiac muscles are consisted of ..... , ..... and branched muscle fiber.
14. when a muscle contracts, the other relaxes so that these muscles are called as .....
15. There are ..... which lie obliquely on the neck.
16. The heartbeats and food movements through the digestive tract (stomach, intestine), are the examples of movement which is resulted by the ..... and ..... of muscles which are found in the walls of these organs.
17. Muscles receive ..... from nervous system in order to con- tact and relax.
18. the muscle shows weakness in its ability to contraction and relaxation. So, it becomes harder and this is called as .....

**Answers**:

1. Muscles
2. Muscle fiber
3. Skeletal muscles
4. Voluntary muscles
5. Muscle fiber
6. Striated muscle
7. Tendon
8. 600
9. Bony skeleton, movement
10. Smooth muscles
11. Involuntary muscles
12. Cardiac muscle, involuntary muscle
13. Striped, short
14. Antagonistic
15. Round muscles
16. Contraction and relaxation
17. Impulses
18. Muscle fatigue

## Write the function of the followings.

| Body parts | Their functions |
|---|---|
| Muscle | 1. Muscles give the outer shape of the body<br>2. help to perform different movements.<br>3. Some of them are responsible for internal body movements |
| Tendon | Ends of each muscle are connected with a tough cord called tendon. |
| Biceps Muscle | If the biceps muscle contracts the arm moves towards the humerus. |

## What is the location of followings?

| Body parts | Their locations |
|---|---|
| Smooth muscle | Found in the walls of the internal organs. |
| Biceps muscle | Located in front of the humerus. |
| Triceps muscle | Located behind the humerus. |
| Striated muscle | Found in heart and skeletal muscle. |
| Cardiac muscle | found in the heart |
| Tendon | End of every skeletal muscle. |
| Round muscle | Found in neck. |

## ➢ Write the cause of the followings.

**1. Some muscles are called striated muscle.**

**Answer:** each cell (fiber) contains dark and bright sections alternatively, this structure give the muscle straited form. When it's examined under microscope.

**2. Smooth muscles are called as involuntary muscle.**

**Answer:** Because we cannot control their movements. They are not under our control.

**3. Skeletal muscles are voluntary muscle?**

**Answer:** Because we can control their movements. They are under our control.

**4. The Cardiac muscle and the skeletal muscle are called as striated muscle.**

**Answer:** These muscles consist of many elongated cells (fibers). Each cell contains bright and dark sections alternatively. This structure gives the cell a striated form when it is examined under the microscope. For this reason, they are called striated muscles.

## ➢ Answer the following questions.

### 1. What are the characteristics of cardiac (heart) muscle?

**1-**It is located in the wall of heart **2-**It is responsible for working of heart
**3-**Its cells are short and branched **4-**Its cells have bright and dark regions (striated)
**5-**Its cells contain one nucleus, which is located in the center and sometimes there are two nuclei

### 2. What are the differences between skeletal muscles and smooth muscles?

| Skeletal muscle | Smooth muscle |
|---|---|
| 1-it is connected with bony skeleton | 1-it is found in the structures of internal organs |
| 2-it is responsible for body movements | 2-it is responsible for working of internal organs |
| 3-it is a voluntary muscle | 3-it is an involuntary muscle |
| 4-it consists of many elongated cells | 4-its cells are spindle shaped |
| 5-its cells have bright and dark regions | 5-its cells have no bright and dark regions |
| 6-its cells contain more than one nucleus, which is not located in the center of cell | 6-its cells contain one nucleus, which is located in the center of cell |

### 3. What are the differences between cardiac muscles and smooth muscles?

| *Cardiac muscle* | *Smooth muscle* |
|---|---|
| 1-it is located in the wall of heart | 1-it is found in the structures of internal organs |
| 2-it is responsible for working of heart | 2-it is responsible for working of internal organs |
| 3-its cells are short and branched | 3-it is an involuntary muscle |
| 4-its cells have bright and dark regions (striated) | 4-its cells are spindle shaped |
| 5-its cells contain one nucleus, which is located in the center and sometimes there are two nuclei | 5-its cells have no bright and dark regions<br>6-its cells contain one nucleus, which is located in the center of cell |

### 4. What is the muscle fatigue and which factors caused it?

The muscles cannot work continuously without stopping, only for a limited period. But if it is forced, the muscle shows weakness in their ability to contraction and relaxation. So it becomes harder and this is called as muscle fatigue.

The muscle fatigue may be caused;

**1-**Because of nutritional deficiency in the muscle.
**2-**Because of accumulation of toxic waste-materials in the muscle.
**3-**Because of weakness of nervous system.
**4-**In addition because of hunger, sleeplessness and poor ventilation.

5. **Write the causes of muscle fatigue.**

**1-**Because of nutritional deficiency in the muscle.
**2-**Because of accumulation of toxic waste-materials in the muscle.
**3-**Because of weakness of nervous system.
**4-**In addition because of hunger, sleeplessness and poor ventilation.

6. **What are the methods for preventing the muscle fatigue occurrence?**

1. You should stop working
2. provide enough time for relaxation. This helps the body for discharging the accumulated toxic materials from the muscle, for repairing the damaged cells and also for storing the nutrients which are necessary for working of muscles

7. **Which muscle when its contract the arm become closer to the truck?**

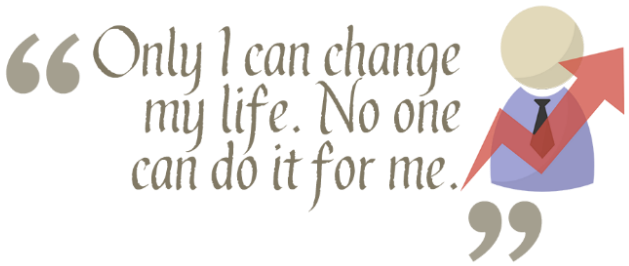
**Answer:** adductor muscles.

8. **Mention the types of muscle and their characteristics.**

1. **Skeletal muscle** 2. **Smooth muscle** 3. **Cardiac muscle**

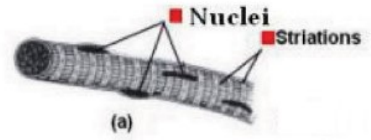
9. **Give some examples for involuntary muscle and voluntary muscle**

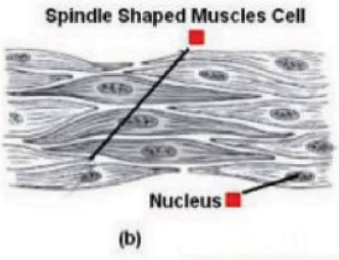
| Muscles | Examples |
|---|---|
| **Involuntary muscle** | Smooth muscle and cardiac muscle |
| **Voluntary muscle** | Skeletal muscle |

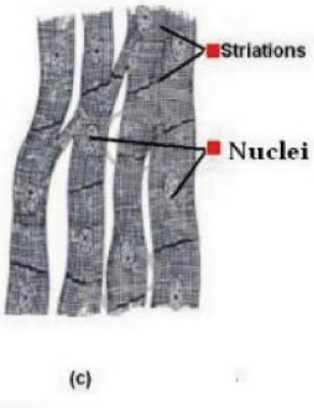


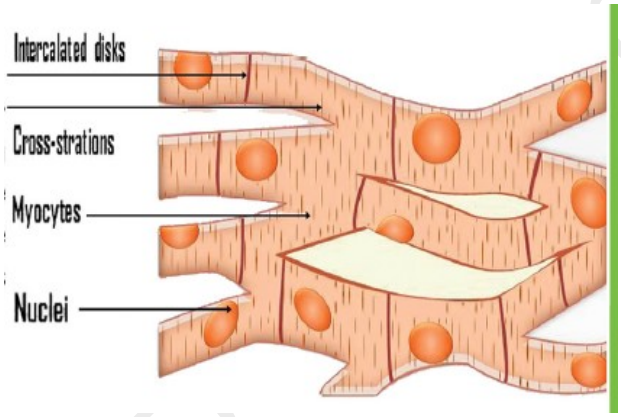
## ➢ Draw the followings and write the names of the parts.

1. Longitudinal section of smooth muscle
2. Longitudinal section of cardiac muscle
3. Longitudinal section of skeletal muscle



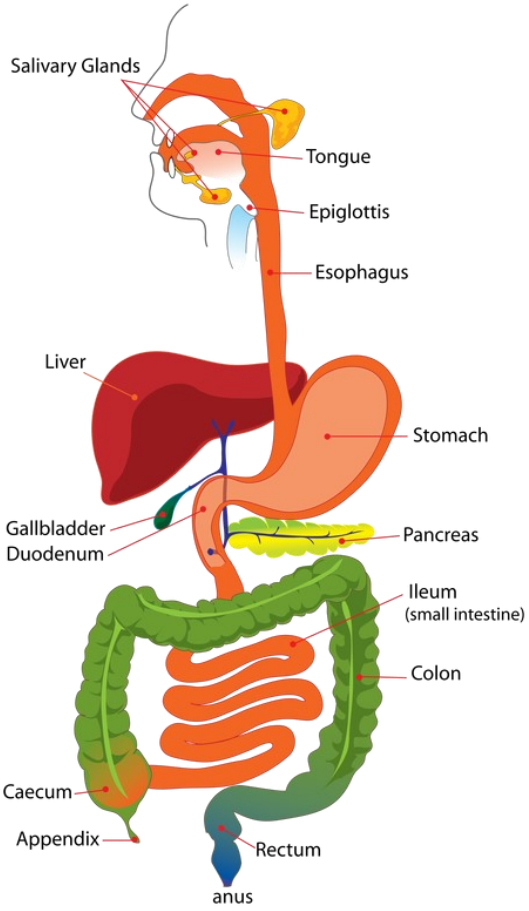




**Practice here**

# Chapter { 3 }

# Digestive System Question Banks



Chapter 3

# DIGESTIVE SYSTEM

## ➢ Define the followings.

1. **Digestion:** It is the breaking down of big food molecules into smaller units.

2. **Ptyalin enzyme:** It is a digestive enzyme, which is found in saliva and digests the starch into disaccharides.

3. **Esophagus:** It is a muscular tube which is extended from pharynx to stomach through the neck, chest and diaphragm and then, it enters the stomach through the cardiac sphincter. It is about 25 cm long. The esophagus is (covered) with mucosa. Its walls consist of muscular tissue.

4. **Pepsin:** It is a digestive enzyme, which is found in stomach. It is responsible for digesting protein materials and converting it into smaller units.

5. **Peristalsis:** This wave like motion of the muscles is called peristalsis.

6. **Eustachian tube:** There are two tubes (canals) which open to pharynx near the tonsils and these two tubes connect the pharynx with the middle ear. These tubes are called Eustachian tubes.

7. **Villi:** Small intestine consists of muscular layers and the internal surface has tiny finger-like projections called villi.

8. **Bile:** Bile is a concentrated, dark-green near to yellowish liquid and its taste is bitter.

9. **Bolus:** The food is mixed with saliva which moistens and softens the food. The ground food mixed with saliva is called as bolus.

10. **Chyme:** the food molecules mix with gastric juice in the stomach, the food molecules form a concentrated mass. This concentrated mass is called as chyme.

11. **Gall bladder**: is a sac connected with liver by the liver-bile duct and it is located behind the right lobe of the liver. Its function is to store bile liquid.

12. **Caecum:** It is a closed sac, which is located at the beginning of large intestine. There is a finger like projection, which arises from caecum and called appendix. The caecum and appendix are located at the right- hand lower part of abdominal cavity.

13. **Chyle:** in the small intestine Food converted to thick white mass called chyle**,** which contains simple absorbed molecules.

14. **Tongue:** It consists of a group of muscles with nerve fibers. The tongue is helps speech, detects the tastes, helps chewing and swallowing of food.

15. **Epiglottis:** It is a valve which is formed from soft cartilage tissue and separates the pharynx from the larynx. It prevents the food molecules from entering trachea.

16. **Larynx:** It is a cone shaped structure which is lined with mucous membrane and located above the trachea.

17. **Tonsils:** There are two lymphatic glands on both sides of the pharynx. These glands are called **tonsils.**

18. **Periton:** The small intestine is covered by mucosa from inside and covered by **Periton** from outside.

19. **Pancreas:** It is located between the stomach and duodenum and connected with them by periton membrane. It has a leaf-like shape. The right part of the pancreas is surrounded by duodenum. Inside pancreas, there are tiny ducts which are joined with each other to form the main pancreatic duct.

## ➢ Fill in the blanks correctly?

1. The food is considered as a ..... and this energy is used by human body to sustain life.
2. ..... is a long tube which starts with mouth and finishes with anus?
3. ..... is a cavity surrounded by muscles of cheek, muscles of lips and bony roof covered with mucosa.
4. ..... is consists of a group of muscles with nerve fibers. Helps speech, detects the tastes, chewing and swallowing food.
5. ..... It is a muscular cavity lined with mucosa. It is extended from the mouth to the larynx from the anterior and to the esophagus from the posterior.
6. Pharynx is separated from the larynx by a soft cartilage tissue called .....
7. ..... prevents the entering of food molecules into the trachea.
8. There are two lymphatic glands on both side of the pharynx, these glands are called.....
9. there are two tubes (canals) which open to pharynx near the tonsils and these two tubes connect the pharynx with the middle ear. These tubes are called.....

10. ..... is a muscular tube which is extended from pharynx to stomach through the neck, chest and diaphragm and then, it enters the stomach through the cardiac sphincter.
11. the wave like motion of digestive system muscles is called .....and it continues along the digestive tract.
12. Stomach is covered with a thin membrane called ..... from outside.
13. Stomach has two openings the upper opening called ..... and the lower opening called.....
14. ..... prevents the food and gastric juice from re- turning to esophagus.
15. ..... controls the movement of the food into the duodenum and prevents the duodenum contents from re- turning to stomach
16. ..... is an enzyme to digest the proteins.
17. ..... is a long and coiled muscular tube which lies in the middle of the abdominal cavity.
18. The small intestine is covered by mucosa from inside and covered by.....from outside
19. Small intestine consists of muscular layers and the internal surface has tiny finger-like projections called.....
20. Small intestine consists of followings parts; ..... , ..... and .....
21. ..... is the first part of the small intestine; it is about 30 cm. Duodenum is a C shaped and surrounds the pancreas.
22. .....is the biggest and the final part of the small intestine.
23. ..... is the final part of the digestive tract its length is about 1.5 meters. Its structure looks like small intestine but it does not have villi in the inner surface
24. ..... It is a small (about 7 cm) finger like closed tube It is located in the right-hand lower part of the abdominal cavity.
25. ..... It starts after descending colon and it is a straight tube, which is located behind the bladder.
26. There are three pairs of salivary glands located on the both sides of the face. They are called..... , ..... and .....according to their locations.
27. Saliva contains ..... which acts on starch to digest it in the mouth and to convert it into disaccha-rides.
28. ..... is a dark red, spongy-like organ. It is covered by Periton membrane and is located beneath the diaphragm in the right side of the abdomen, next to stomach.
29. A small sac under the liver called .....stores the bile. It is connected to liver by a duct.
30. Liver Storrs the excess amount of carbohydrates as.....
31. ..... Is an enzyme which prevents the blood clotting in blood vessels.
32. Liver is Manufacturing the..... an ..... which are important for blood clotting

33. The ground food mixed with saliva is called as.....
34. After the food molecules mix with gastric juice in the stomach, the food molecules form a concentrated mass. This concentrated mass is called as .....
35. Cholera is caused by special bacterium called.....
36. Typhoid fever is caused by special bacterium called .....which infect human by ingestion of food and drinks.
37. If the food taken into body is more than the body requirement, excess amount of food is stored in the body and cause .....
38. The associated glands of the digestive system are ..... , ..... and .....
39. Cholera caused by a special bacterium called .....

## Answers:

1. Source of energy
2. Digestive system
3. Mouth
4. Tongue
5. Pharynx
6. Epiglottis
7. Epiglottis
8. Tonsils
9. Eustachian tubes
10. Esophagus
11. Peristalsis
12. Periton
13. cardiac sphincter, pyloric sphincter
14. Cardiac sphincter
15. Pyloric sphincter
16. Pepsin
17. Small intestine
18. Periton
19. Villi
20. Duodenum, jejunum and ileum
21. Duodenum
22. Ileum
23. Large intestine
24. Appendix (Cecum)
25. Rectum.
26. parotid glands, submandibular glands and sub-lingual glands
27. ptyalin enzyme.
28. Liver
29. Gallbladder
30. Glycogen
31. Heparin
32. prothrombin and fibrinogen
33. Bolus
34. Chyme
35. Vibrio cholera
36. Salmonella typhi
37. Obesity
38. Salivary glands, liver and pancreas

## ➢ What is the location of followings?

| Body parts | Their locations |
|---|---|
| **Epiglottis** | It is located behind the tongue. |
| **Eustachian tube** | It is located between middle ear to pharynx. |
| **Tonsil** | It is on both sides of the pharynx. |
| **Stomach** | It is located beneath the diaphragm in the left anterior region of the abdomen. |
| **Small intestine** | It is in the middle of the abdominal cavity. |
| **Villi** | It is located in the internal surface of the small intestine. |
| **Liver** | The top of the abdomen, directly under the right side of the diaphragm, next to the stomach. |
| **Salivary glands** | They are found in both side of mouth |
| **Incisors** | In the middle of the law in the front part of the mouth |
| **Canine** | In upper and lower jaws on each side of incisors. |
| **Molar** | There ten molars in each jaw. |
| **Cardiac sphincter** | The upper opening of stomach. |
| **Pyloric sphincter** | The lower opening of the stomach. |
| **Duodenum** | The first part of small intestine. |
| **Jejunum** | Between duodenum and ileum. |
| **Ileum** | The last part of the small intestine. |
| **Gall bladder** | Under the liver. |
| **Pancreas** | Between the stomach and duodenum. |

## ➢ Write the function of the followings.

| Body parts | Their functions |
|---|---|
| **Epiglottis** | It prevents the food molecules from entering trachea. So epiglottis provides the passing of food into esophagus and passing of air into larynx. |
| **Eustachian tube** | The function of Eustachian tube is to equalize the air pressure on both sides of eardrum. |
| **Esophagus** | The food and liquid molecules are pushed downward to stomach. |
| **Pepsin enzyme** | It is a digestive enzyme, which is found in stomach. It is responsible for digesting protein<br>materials and converting it into smaller units. |
| **Large intestine:** | **1.** Absorbing the water.<br>**2.** Storing the undigested food materials for a limited time, until they are eliminated.<br>**3.** Pushing the waste materials to outside of the body from the anus by means of contractions and relaxations of intestinal walls.<br>**4.** There is no digestion process in the large intestine. |
| **Liver** | **1.** Secreting the bile<br>**2.** Storing the excess amount of carbohydrates as glycogen.<br>**3.** Converting the excess number of proteins into urea.<br>**4.** Manufacturing the heparin enzyme which prevents the blood clotting in blood vessels.<br>**5.** Manufacturing the prothrombin and fibrinogen, which are important for blood clotting. |
| **tongue** | **1.** The tongue is helping speech<br>**2.** detects the tastes<br>**3.** helps chewing and swallowing of food. |
| **stomach** | **1.** To mix the food by peristalsis.<br>**2.** Secretion of pepsin enzyme to digest the proteins.<br>**3.** Secretion of HCL (%0.2 concentration) to make stomach acidic.<br>**4.** To absorb water, some minerals and vitamins through the walls of it. |

| | |
|---|---|
| **small intestine** | **1.** Neutralizing the food coming from the stomach to small intestine, by the effect of bile.<br>**2.** Completing the digestion of the food which consists of carbohydrates, fats and proteins by the act digestive juices secreted by small intestine.<br>**3.** Absorbing the nutrients.<br>**4.** Pushing the undigested materials into large intestine by its peristalsis. |
| **Incisors** | Cutting the food. |
| **Canine** | Tearing the food. |
| **Molar** | Chewing and grinding the food. |
| **Cardiac sphincter** | prevents the food and gastric juice from re- turning to esophagus. |
| **Pyloric sphincter** | prevents the duodenum contents from re- turning to stomach. |
| **Pepsin** | Digesting the proteins. |
| **Heparin** | Prevent blood clotting inside the blood vessels |
| **The Bile** | Neutralizing the food coming from the stomach to small intestine.<br>Or. Help digesting fatty materials into smaller pieces |

## ➢ Write the cause of the followings:

1. **There are villi in inner layer of small intestine.**
   **Answer:** They resist the food movement to complete its digestion and provide enough time for food digestion. So they provide food absorption.

2. **Starchy food becomes sweet after chewing it in the mouth. or the taste of bread becomes sweet after chewing it in mouth?**
   **Answer:** Because saliva contains ptyalin enzymes which act on starch and digest it into disaccharides. For this reason, the taste of bread becomes sweet after chewing it in mouth.

3. **The epidermis is crisped who infected by cholera.**
   **Answer:** In the cholera disease, the patient loses a great amount of body liquid because of the diarrhea. So the skin is crisped.

4. **Food does not enter the trachea during eating.**
   **Answer:** Because epiglottis prevents the entering of food molecules into the trachea.

5. **The patient who infected by cholera is isolated from residential place.**
   **Answer:** to prevent the infection and spreading of this disease.

## ➢ Answer the following questions.

1. **Explain the digestion in mouth briefly.**

   **Answer:** The food molecules are cut and ground into smaller pieces by chewing. With the help of the tongue, the food is mixed with saliva which moistens and softens the food. The ground food mixed with saliva is called as bolus. In addition, the saliva contains ptyalin enzyme which acts on the starchy materials and digests them into smaller sugars.

2. **Explain the digestion in stomach briefly.**

   **Answer:** The food is mixed with gastric juice by the peristaltic movements of stomach. Gastric juice is containing hydrochloric acid. It also activates the pepsin enzyme which converts the proteins into smaller units. After the food molecules mix with gastric juice in the stomach, the food molecules form a concentrated mass. This concentrated mass is called as chyme. Chyme is pushed through the pyloric sphincter into the duodenum.

3. **Explain the structure of stomach.**

   **Answer:** It is a muscular organ which consists of many muscular layers covered with crisped mucosa. Crisped mucosa. contains glands which secrete gastric juices to digest the food. Stomach is covered with a thin membrane called Periton from outside. It has two openings; the upper opening called cardiac sphincter and the lower opening called pyloric sphincter.

4. **Explain the digestion in small intestine.**

   **Answer:** When the food molecules pass into the small intestine, three types of secretions act on them:

   1. the bile is secreted on chyme, bile helps to digest fat.
   2. Other pancreas enzymes are secreted to digest proteins and carbohydrates.
   3. Food converted to thick white mass called chyle, which contains simple absorbed molecules.

5. **What is the cause of cholera?**

   **Answer:** It is caused by special bacterium called Vibrio cholera. Cholera microbes which are found in food and drinks enter the digestive system through the mouth.

## ➢ Write the symptoms of the followings?

1. **Write the symptoms of Cholera**
   - Patient has strong diarrhea and vomiting.
   - The feces of the patient look like the rice water.
   - the epidermis (skin) of patient is crisped.
   - strong intestinal colic in addition to diarrhea and vomiting.

2. **Write the symptoms of amoebic dysentery.**
   - intestinal colic
   - light diarrhea occurs
   - the faces of patients become soft or watery and smell bad.
   - the patient feels emaciation
   - the body temperature increases slightly.

3. **Write the symptoms of typhoid fever.**
   - Increasing body temperature and strong headache.
   - inappetence and tiredness seen.

4. **Write the symptoms of obesity.**
   - increasing of the body weight.
   - thickening the skin layers.
   - Increasing the blood pressure.

## ➢ Write the prevention of the followings?

1. **What are the preventions against Cholera?**
   - Isolating the patients to isolated hospitals or sanitation places away from residential area and the visiting must be prevented.
   - Confining the people who are in contact with the patients.
   - Supervising the drinking water and its sterilization.
   - Sterilization of wastes of patient with Lysol or phenol or chloride.
   - Using insecticides for controlling the insects' transporting microbes to prevent contamination.
   - Sterilizing the fruits and vegetables with chloride solution before eating.
   - Informing the people about the hygiene.
   - Sterilization of water and food is announced before consuming these.

**2. What are the preventions against typhoid fever?**

- Don't use the patient's tool and eat unhealthy food.
- Killing the insects by insecticides because they are carrier.
- Washing hands with soap after defecation process.
- Keep the environment clean and taking healthy food.
- Sterilizing the fruits and vegetables before eating.

**3. What are the preventions against amoebic dysentery?**

- Washing the fruits and vegetables before eating.
- sterilization of water.

**4. What are the preventions against obesity?**

- the obesity can be prevented by reducing the food intake.
- performing suitable sports.

## ➢ Write the treatments of the followings?

**1. What are the treatments for Cholera?**

- The patient is isolated from residential places.
- Liquids must be given to the patient to replace the liquids which are lost from the body.
- special medicines must be given.

**2. What are the treatments for typhoid fever?**

- Visiting the physician and starting the necessary treatment as soon as symptoms are observed.
- Taking large amount of sterilized water and relaxation.
- Balance the body temperature.

**3. Write the treatments for amoebic dysentery.**

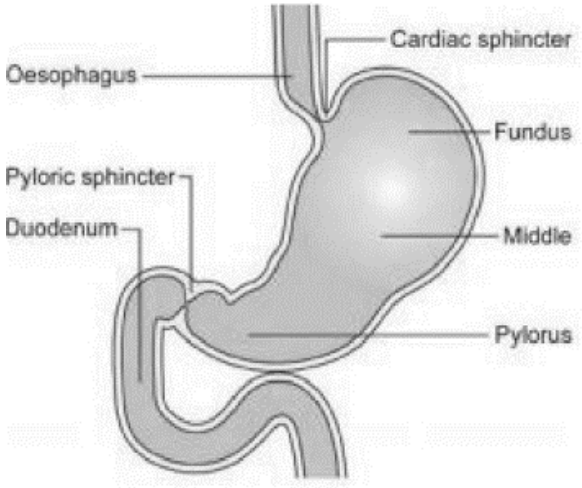
- The patient is treated by resting in the bed.
- supplying the light diet (semi-liquid).
- The patient is treated with drugs for reducing the abdominal colic.
- visiting the physician.

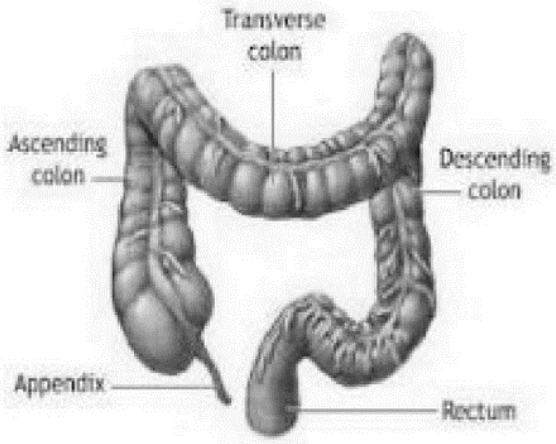
**4. What are the treatments for obesity?**

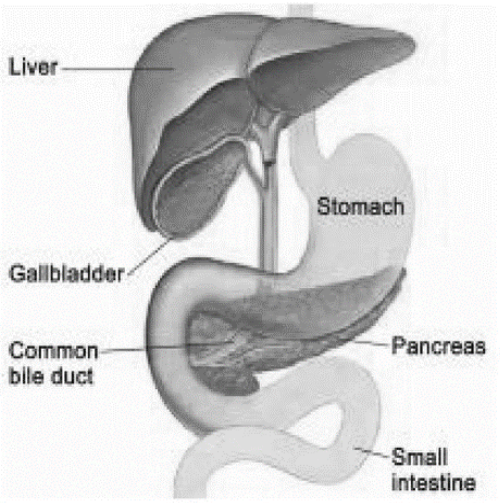
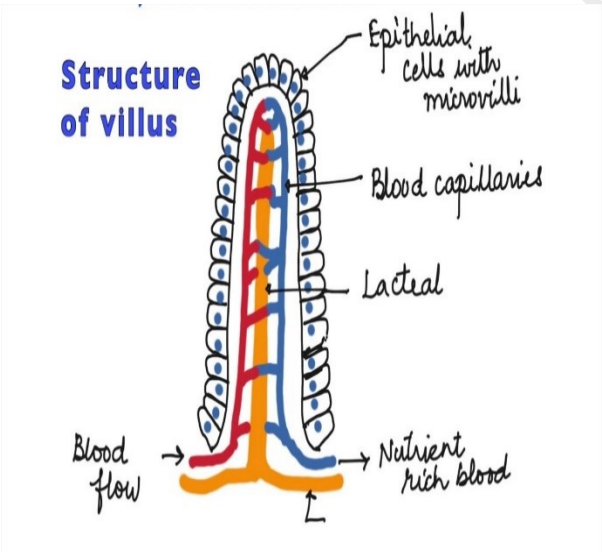
- The obesity can be treated by regulating the diets.
- reducing the fats and carbohydrates in the diets.
- performing the physical exercises regularly.

## ➢ Draw the following:

1. **Stomach**
2. **Large intestine**
3. **Liver and Pancreas.**
4. **Villi**

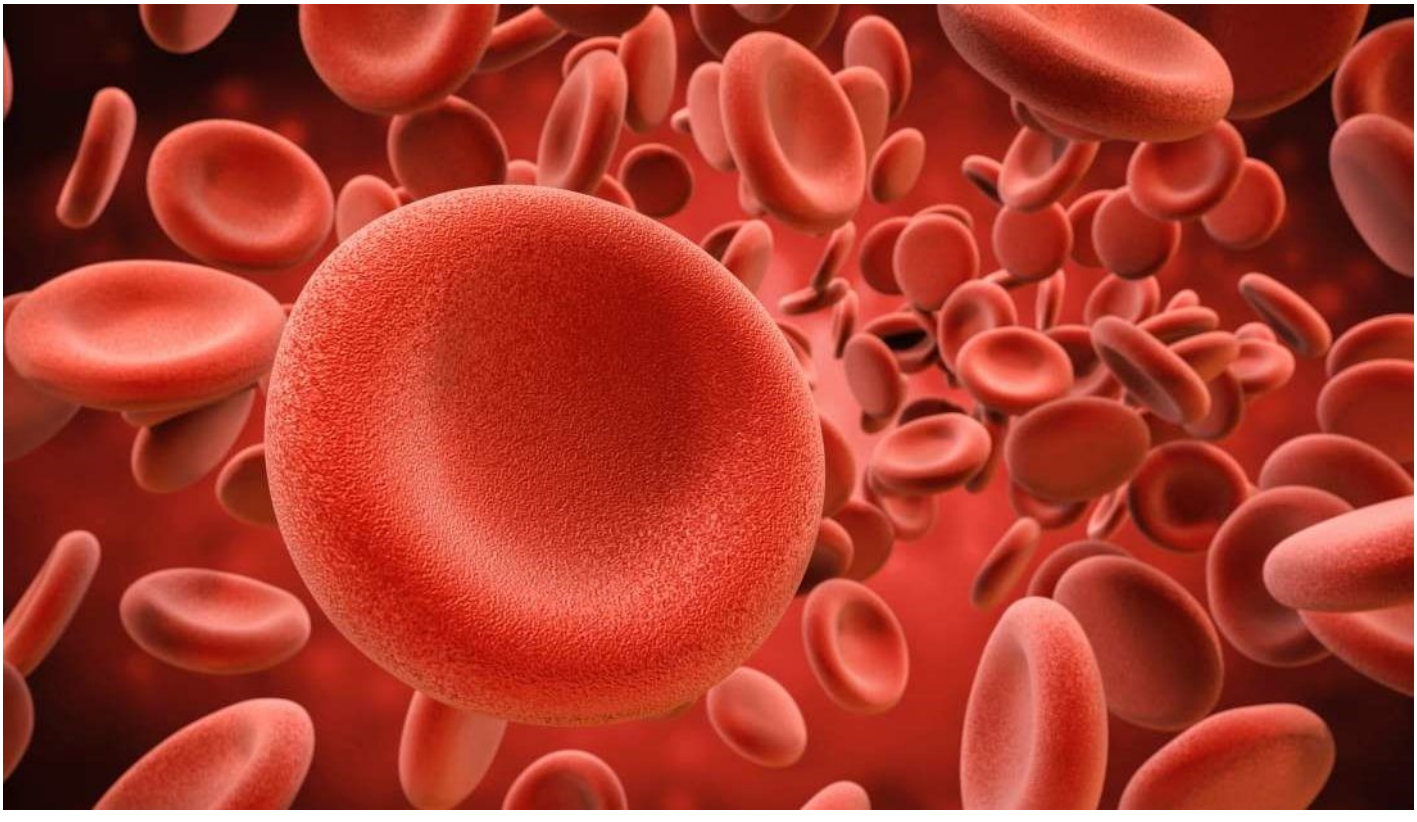
| Stomach | Practice here |
|---|---|
|  | |

| Large intestine | Practice here |
|---|---|
|  | |

| Liver and pancreas | Practice here |
|---|---|
|  | |
| **Villi** | **Practice here** |
|  | |

# Chapter { 4 }

# Circulatory System Question Banks



Chapter 4

# CIRCULATORY SYSTEM

## ➢ Q. Define the followings.

1. **Hemoglobin:** It is a red pigment which is found in red blood cells and also it is a special protein that contains iron. Hemoglobin caries O2 and CO2 in the body.

2. **Blood platelets:** They are very tiny discs or oval shaped cells. They have no nucleus. Its diameter is about 2 microns. There are about 250000 platelets in 1mm3 of blood. Provide blood clotting after an injury or bleeding happens. The platelets come together and form clumps in the area of bleeding or injury.

3. **Tricuspid valve:** It is a valve found in the right side of the heart. It separates right atrium and right ventricle. It has three cusps. So that it is known as tricuspid valve. It prevents the backflow of blood into atrium.

4. **Bicuspid valve:** It is a valve found in the left side of the heart. It separates left atrium and right ventricle. It has only two cusps. So that it is known as mitral valve (bicuspid). It prevents the backflow of blood into atrium.

5. **Semilunar valve:** Semilunar valves are two valves. One of them is found between the left ventricle and aorta (aortic valve). The other is found between the right ventricle and pulmonary artery (pulmonary valve).

6. **Heart beat:** The contraction and relaxation of the heart is called as heartbeat. The number of heartbeats in normal person is about 72 beats in a minute during the rest.

7. **Blood plasma:** It is a clear yellow liquid, which makes up 55% of the total volume of the blood. It consists of 90% water and 10 % dissolved materials, such as absorbed nutrients, salts, antibodies, hormones and some waste materials. Also, other blood contents swim in blood plasma

8. **Universal donor:** O blood group can give blood to all groups so it is called general donor.

9. **Universal recipient:** AB blood group can accept blood from all others so it is called general recipient.

10. **Heart attack:** It is a physiological heart disease. Disorders of the heart and irregular heart pulses cause a strong pain in the chest and sometimes the working of the heart stops completely. This condition causes sudden death and it is called heart attack. Arteriosclerosis and high blood pressure increase the possibility of heart attack.

11. **Blood pressure:** The blood pressure is the pressure of the blood on the walls of blood vessels when the blood passes through the vessels. When the heart pumps the blood into the vessels, this pressure is formed. The blood pressure is measured by special apparatus which puts on the radius artery.

12. **Bicuspid valve:** It is a valve found in the left side of the heart. It separates left

13. **Hemophilia:** Hemophilia is a genetic disease. When a bleeding happens, the bleeding does not stop in hemophilic people. It may cause the death, because of a wound or a simple accident.

14. **Lymph node:** When the lymphatic vessels connect with each other in their meeting place, a swelling form. This swelling is called as lymph node.

15. **Stethoscope:** It is an instrument used by doctors to listen to patient's heart or breathing.

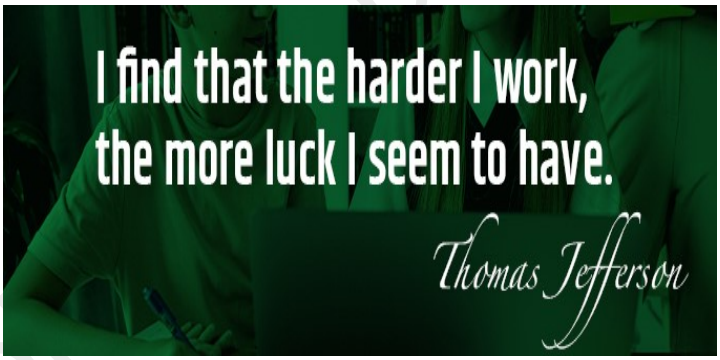
16. **Rh Factor:** Some people have a protein in their blood called **Rh factor**, or **lyzen** while some people do not have this factor. If the surfaces of the RBCS contain Rh factor, this blood is called as Rh(+) . If there is no Rh factor on the surface of the RBCS this blood group is called as Rh(-) This factor must be examined during blood transfusions.

## ➢ Q. Fill in the blanks correctly?

1. There are two groups of white blood cells they are ..... and .....
2. Granulocyte formed in ..... while Agranulocytes formed in .....
3. Blood circulation system consists of ....., ..... and .....
4. Lack of red blood cells or hemoglobin in blood causes the .....
5. Hemophilia is a ..... disease.
6. The person who carries blood group .....can take blood from all other groups, while the person who carries blood group .....can give blood to all other groups.
7. The hemoglobin is responsible for transporting ..... and .....
8. The blood circulation that happens from .....to lungs and from lungs to .....is called as small blood circulation (pulmonary circulation).

9. The pulmonary artery leaves out .....and carries blood from .....of heart. It is branched into two parts and each branch goes to each lung.
10. The blood circulation that happens from right ventricle to lungs and from lungs to the left atrium is called .....
11. The lymphatic vessels are diffused throughout the body and secrete their contents into two mains ducts; .....and .....
12. The blood circulation from right ventricle into lungs and returning to the left atrium called .....**.**

**Answers:**




1. granulocytes and agranulocytes.
2. Boon marrow, Lymph nodes
3. blood, heart and blood vessels.
4. anemia.
5. Genetic.
6. (AB), (O).
7. Oxygen and Carbon dioxide.
8. right ventricle, the left atrium
9. pulmonary blood circulation.
10. right lymphatic duct and left lymphatic duct.
11. pulmonary circulation.

## ➢ Q. Write the function of the followings.

| Parts or responsibles | Their functions or responsibility |
|---|---|
| **Human circulatory system** | 1. Transportation of oxygen, absorbed nutrients and hormones to the body tissues.<br>2. Transportation of waste products to the excretory organs<br>3. Distribution of heat in the body by means of blood and lymph liquids circulating in reticular vessels which are diffused in the body. |
| **Hemoglobin** | It carries O2 and CO2. |
| **Tricuspid valve** | It controls the flow of blood from atrium to ventricle. |
| **Bicuspid (mitral) valve** | It prevents the back flow of blood. |
| **Semilunar valve** | They prevent the back flow of blood into the right and left ventricles from the aorta and the pulmonary artery. |
| **Aortic Valve** | They prevent the back flow of blood into the right and left ventricles from the aorta and the pulmonary artery. |
| **Artery** | They transport blood from heart to body organs. All arteries transport oxygenated blood except pulmonary arteries. |
| **Superior Vena Cava** | It collects de-oxygenated blood from the body parts located above the diaphragm and transports it to right atrium. |
| **inferior Vena Cava** | It collects de-oxygenated blood from the body parts located below the diaphragm and transports it into right atrium. |
| **Pulmonary veins:** | There are four pulmonary veins. They collect oxygenated blood from lungs and transport it into left atrium. |
| **Cardiac (coronary) veins:** | a group of small veins collect the de-oxygenated blood from the heart muscles. These small veins are connected with each other and form a vein which ends at right atrium. |
| **Pulmonary artery** | It transports the de-oxygenated blood from right ventricle to lungs; it is branched into two parts and each branch goes to each lung. |
| **Aorta** | It is the largest blood vessel and the most branched vessel. The aorta extends from left ventricle it transports oxygenated blood from heart to all body tissues (except the lungs). |
| **Cardiac (coronary) arteries** | pair of small arteries branch from the aorta just as it emerges from the heart. They nourish the heart muscles. |

| | |
|---|---|
| **Systematic circulation Small blood circulation** | The aim of pulmonary circulation is to charge blood with oxygen and to remove the carbon dioxide from body. |
| **Small blood circulation (pulmonary circulation)** | It provides the taking oxygen into the blood and discharging carbon dioxide and water vapor from the blood. |
| **Lymph node** | They clear the lymph from bacteria and other harmful materials. |
| **Heparin** | It prevents the blood clotting inside the blood vessels. |
| **thromboplastin** | This enzyme converts the prothrombin into thrombin by means of the calcium ions. |
| **Thrombin** | converts the fibrinogen into fibrin which is a sticky substance |
| **Fibrin** | collects the red blood cells and platelets and forms a solid mass. The blood clot closes the injured area, so bleeding stops. |
| **lymph** | The lymph contains white blood cells which penetrates the walls of blood capillaries by means of amoebic motion. |
| **Right lymphatic duct** | It collects the lymph from upper right parts of the body, head, neck, trachea and some parts of the liver and transports it into the right subclavian vein near the heart. |
| **Left lymphatic duct** | It is the largest lymphatic duct tern in the body. It collects the lymph from the other parts of body and trans-<br>ports it to the left subclavian vein. |
| **Stethoscope** | It is an instrument used by doctors to listen to patient's heart or breathing. |
| **sphygmomanometer** | For measuring the blood pressure. |
| **Blood platelets** | They provide blood clotting after an injury or a bleeding. The platelets come together and form clumps in the area of injury. |

## ➢ Q. What is the location of followings?

| Body parts | Their locations |
|---|---|
| **Heart** | In the chest between the lungs, slightly to the left of center. |
| **Hemoglobin** | Found on the surface of red blood cells. |
| **Pericardium** | Cover the outer part of heart. |
| **Atria** | Found at the top of heart. |
| **Ventricles** | Found at the lower part of heart. |
| **Mitral valve** | Found in the left side of heart. |
| **Bicuspid valve** | Found in the left side of heat, it is located between left atrium and left ventricle of heart. |
| **Tricuspid valve** | Found in the right side of heat, it is located between right atrium and right ventricle of heart. |
| **Semilunar valve** | Found between left ventricle and aorta. And found between right ventricle and pulmonary artery. |
| **Superior vena cava** | Located above the diaphragm. |
| **Spleen** | It is located under the stomach. |

## ➢ Q. Write the cause of the followings:

**1-The walls of blood capillaries are very thin.**

Answer: Thin walls of the capillaries help the diffusion of substances and white blood cells pass through the capillaries easily.

**2-Blood group (A) does not receive blood from blood group (B).**

Answer: The carrier of this group can receive the blood from the group (O and A). If he takes blood from other groups, the decomposition of red blood cells happens and last parts of the red blood cells are released into the blood circulation. Finally, unconsciousness occurs and receiver dies.

**3-Blood group (O) does not receive blood from blood group (AB).**

Answer: The carrier of this group can receive the blood from the group (O) only. If he takes blood from other groups, the decomposition of red blood cells happens and last parts of the red blood cells are released into the blood circulation. Finally, unconsciousness occurs and receiver dies.

**4-A person who carries the blood group (o) is called as general donor.**

Answer: The carrier of this group can receive the blood from the group (O) only. But it can give the blood to all
blood groups. For this reason, this group and carrier of this group are called as general donor.

**5-A Person who carries blood group AB is called general recipient.**

Answer: The carrier of this group can receive the blood from the all-blood group. But it can give the blood to (AB)
only. For this reason, this group and carrier of this group are called as general recipient.

**6-AB blood group is called (general recipient).**

Answer: The carrier of this group can receive the blood from the all-blood group. But it can give the blood to (AB)
only. For this reason, this group and carrier of this group are called as general recipient.

**7-If the blood group of mothers is Rh (-) while father's Rh (+), fetus will be danger.**

Answer: Because the mother's body can produce antibodies against the antigens of baby.

**8-Blood manufacturing is not possible in factories or laboratories.**

Answer: Because blood contains living cells.

**9-The oxygenated blood does not mix with deoxygenated blood in heart.**

Answer: Because Oxygenated blood is found in the left part of the heart and deoxygenated blood is found in the right part of the heart. The left part is separated from right part by a wall (septum).

**10-The walls of blood capillaries are very thin.**

Answer: Thin walls of the capillaries help the diffusion of substances and white blood cells pass through the capillaries easily.

**11-Blood clotting does not occur in blood vessels.**

Answer: Because of heparin enzyme which prevents the blood clotting inside the blood vessels.

**12-Sometimes the death occurs, when the blood is transferred to a person.**

Answer: The antigens of donor and the antibodies of recipient react and coagulate which causes blocking of the blood vessels. Finally, unconsciousness occurs and recipient dies.

**12-Enlarged spleen?**

**Answer:** some diseases such as malaria and anemia.

## ➢ Q. Write the differences between the followings.

**1-What are the differences between the red blood cell and white blood cell?**

| Red blood cell | White blood cell |
|---|---|
| **1-It has no nucleus.** | 1-It has nucleus. |
| **2-It is disc shaped** | 2-It is inconstant (amoeboid) shaped. |
| **3-Its color is red (includes hemoglobin).** | 3-It is colorless. |
| **4-It is produced by liver, spleen and bone marrow.** | 4-It is produced by bone marrow or lymph node. |
| **5-It transports Oxygen and Carbon dioxide.** | 5-It produces antibody against the microbes. |
| **6-There are 5.2 million RBC in 1mm3 of male blood.** | 6-There are 8000 WBC in 1mm3 of male blood. |
| **7-There are 5 million RBC in 1mm3 of female blood.** | 7-There are 6000 WBC in 1mm3 of female blood. |
| **8-It has short life.** | 8-It has long life. |
| **9-It has small size.** | 9-It has big size. |
| **10-It cannot cross the walls of capillaries.** | 10-It can cross the walls of capillaries in interstitial fluid and it provides acquired immunity to the body<br>Against diseases. |

**2-Write the differences between arteries and veins?**

| According to | Arteries | Veins |
|---|---|---|
| **Structure** | 1-They have thick walls and they are fibrous muscular tubes. | 1-They have thin walls and they are less elastic than arteries |
| **Function** | 2-They transport oxygenated blood from heart to body organs. (Except pulmonary artery) | 2-They transport deoxygenated blood from body organs to heart (except pulmonary vein). |
| **Location** | 3-They are diffused deeply in the body except radial artery. | 3-Veins are closer to the body surface |
| **Colour** | 4-The blood found in artery is bright-red colored. | 4-The blood found in vein is bluish-red colored. |
| **Blood flow, stope bleeding or blood pressure** | 5-The flowing of blood is rapid in artery so cutting of any artery causes loss of great amount of blood and its stopping is difficult. | 5-The flowing of blood is slow in vein so when it is cut, the bleeding stops easily. |
| **Valves** | 6-There is no valve in the arteries. (Except aorta) | 6-There are small valves in the veins. |

**3- write the different between the Granulocytes and Agranulocytes.**

| Granulocytes | Agranulocytes |
|---|---|
| They have granular cytoplasm | They have non- granular cytoplasm |
| Lobulated nuclei | Lobulated nuclei. |
| They are formed in bone marrow | They are formed in lymph nodes. |

**4- Compare between the Systematic circulation, Pulmonary Circulation and Portal Circulation.**

| systematic circulation | Pulmonary Circulation | Portal Circulation |
|---|---|---|
| 1. It occurs between heart and other body parts.<br>2. The aim of this circulation is to transport oxygen to all body cells and remove poisonous carbon dioxide from these cells. | 1. It occurs between heart and lungs.<br>2. The aim of pulmonary circulation is to charge blood with oxygen and to remove the carbon dioxide from body. The deoxygenated blood coming from all body cells is carried to right atrium through the superior and inferior vena cava. | 1. Portal circulation is a part of the systemic circulation.<br>2. The blood coming from the digestive organs (Intestine) which contains absorbed nutrients does not go directly into the heart.<br>3. Blood goes to the liver by the portal vein which enters the liver.<br>4. Liver regulates the amount of nutrients in the blood. hepatic vein which leaves the liver, delivered blood into the inferior vena cava which transports it to the heart. |

## ➢ Q. Answer the following questions.

**1-Who is the responsible for forming red blood cells in children before birth.**

Answer: They are formed in the spleen and liver in children before birth.

**2-Write the names of blood vessels which connected to heart?**

Answer:

1-Superior Vena Cava
2-Inferior Vena Cava
3-Pulmonary veins
4-Cardiac (coronary) veins
5-Pulmonary artery
6-Aorta
7-Cardiac (coronary) arteries

**3-List the arteries connected with heart.**

Answer: 1-Pulmonary artery 2-Aorta 3-Cardiac (coronary) arteries

**4-What is the spleen? What is its importance for the body.**

Answer:

- The spleen is the largest organ of the lymphatic system. it is a bright red organ located under the stomach. It looks like the lymphatic nodes but it is connected with blood instead of lymph.

Importance:

1. The spleen stores a great amount of the blood and contributes the maintaining the blood percentage in the blood vessels.
2. The spleen produces red blood cells when the bone marrow is not produced.
3. It breaks down and digests the old red blood cells, thus iron of hemoglobin returns into the blood.
4. the spleen clears the blood from debris inside it.

The spleen becomes enlarged when it is infected with some diseases such as malaria and anemia.

**5-What is arteriosclerosis disease? What are the symptoms of it?**

Answer:

**arteriosclerosis disease:**

- If the thickness of the arteries' walls increases, arteriosclerosis happens. The fat materials known as cholesterol accumulate in arteries and increase their thicknesses. This condition causes the obstruction of blood flowing in the arteries.
- The arteriosclerosis is seen in the old people. Also venereal, smoking and alcohol cause arteriosclerosis in young people. The patient dies suddenly by heart stroke or apoplectic stroke.

**Symptoms**:

1. Weakness of the kidney operation is seen.
2. the tissues cannot be supplied with enough blood especially cerebrum.
3. the patient feels pain in the muscles of limbs.
4. unconsciousness and paralysis happen.
5. If the arteriosclerosis happens in the heart arteries, it causes the pain in the chest region.

**6-What is blood transfusion? Which human can give blood? Or what are the conditions which are needed to give blood?**

Answer: The blood giving is a national and humanitarian duty. Blood manufacturing is not possible in factories or
laboratories, because blood contains living cells. Also all trials are failed to use the animal's blood instead of
the human's blood or to substitute the loss of the blood. For this reason the human can receive blood only from
another human.
There are some conditions to give the blood.
1- The age of person who gives blood mustn't be less than 17 and mustn't be more than 55.
2- Also woman who gives blood must not be pregnant or nurse the child.

**7-Explain the Systemic Circulation.**

Answer:
1-It occurs between heart and other body parts. The aim of this circulation is to transport oxygen to all body cells and remove poisonous carbon dioxide from these cells.

2-The aorta branches into smaller arteries, arterioles and capillaries respectively. From capillaries, oxygen and food molecules are given to body cells. Carbon dioxide diffuses into blood so blood becomes deoxygenated.

3-The blood flows from capillaries to veins. These big veins transport the de-oxygenated blood to right atrium. Systemic circulation is completed here and pulmonary circulation follows it and these cycles are
repeated again and again.

**8- Explain pulmonary circulation?**

Answer:
1-It occurs between heart and lungs. The aim of pulmonary circulation is to charge blood with oxygen and to remove the carbon dioxide from body. The de-oxygenated blood coming from all body cells is carried to right atrium through the superior and inferior vena cava.

2-The blood flows from right ventricle. into the pulmonary arteries pulmonary arteries divide into capillaries which surround the gas exchange units. These units are called alveoli. Air diffuses from alveoli into the capillaries and carbon dioxide in blood pass into alveoli to be exhaled.

3-In the lungs, blood becomes oxygenated, pulmonary veins transport oxygenated blood to heart again.

**9-What is the (RH) factor? What is the effect of it on the life of fetus?**

Answer:

- Some people have another protein in their blood called Rh factor, or lyzen while some people do not have
  this factor.
- If the surfaces of the RBCS contain Rh factor, this blood is called as Rh (+) .
- If there is no Rh factor on the surface of the RBCS. this blood group is called as Rh (-).
- 85% of people are Rh (+) and 15% of people is (Rh-).
- This factor also affects the marriages. If the blood group of mother is Rh (-)while father 's is Rh (+),the Rh
  (+)fetus will be in danger. Because the mother's body can produce antibodies against the antigens of baby.

**10-Explain the hemophilia disease?**

Answer: Hemophilia is a genetic disease. The bleeding does not stop in hemophilic people in normal period and genetic structure of the blood is different. Also breaking the blood platelets is difficult when an injury occurs. This disease is generally seen in males also it can be seen in females but hemophilic females can live until puberty.

**11-Explain how does blood clotting occur?**

Answer:

1-When a bleeding occurs, the blood platelets are broken and release a certain enzyme called thromboplastin. This enzyme converts the prothrombin into thrombin by means of the calcium ions.

2-Thrombin converts the fibrinogen into fibrin which is a sticky substance.

3-Fibrin collects the red blood cells and platelets and forms a solid mass. The blood clot closes the injured
area, so bleeding stops.

**12-Tracked by arrows blood clotting?**

bleeding occurs → blood platelets are broken→ release thromboplastin → thromboplastin converts the prothrombin into thrombin →Thrombin converts the fibrinogen into fibrin → Fibrin collects the red blood cells and platelets and forms a solid mass →The blood clot closes the injured area, so bleeding stops.

**13-Explain the location and function of spleen in human.**

Answer: Location: It is a bright red organ located beneath the stomach.

Functions: 1-The spleen produces red blood cells when the bone marrow is not producing them It breaks down and decomposes old red blood cells.

2-The spleen clears the blood from debris inside it.

## ➢ Q. Write the symptoms of the followings?

**1. Anemia:** Answer: 1-Pale face and eyes. 2-General weakness. 3-Inappetence. 4-Indigestion.

**2-Heart attack:** Answer:

1. Several heart diseases.
2. irregular heartbeats can cause a strong pain in the chest and sometimes the heart stops completely. This condition causes sudden death and it is called heart attack. Arteriosclerosis and high blood pressure increase the risk of heart attack.

**3-Hypertension:** Answer:

1- Increasing the percentage of fats and salts in the diets causes the hypertension.
2- Nervousness. 3- Overeat. 4- kidney inflammation. 5- Arteriosclerosis.

## ➢ Q. Write the prevention of the followings?

**1. Heart attack:** Answer:

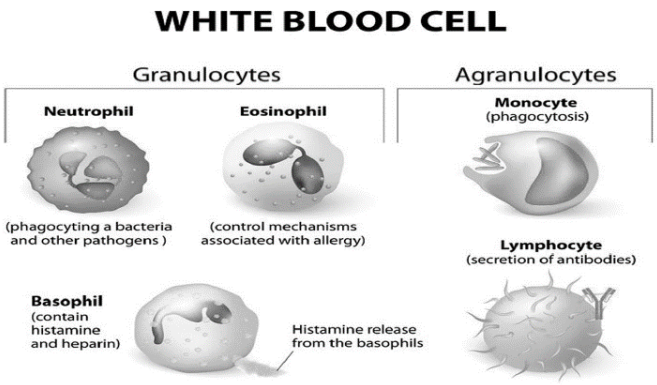
1. We must keep ourselves away from the causes such as smoking, drinking alcohol and hard psychical actions.
2. Visiting the physician is important when you feel any pain in the chest or any other symptoms mentioned before.

**2. Blood pressure:** Answer:

1. The person must have both body and mental health.
2. Regulate the eating times.
3. Reduce the fat level in the meals.
4. Eat more fruits and vegetables.

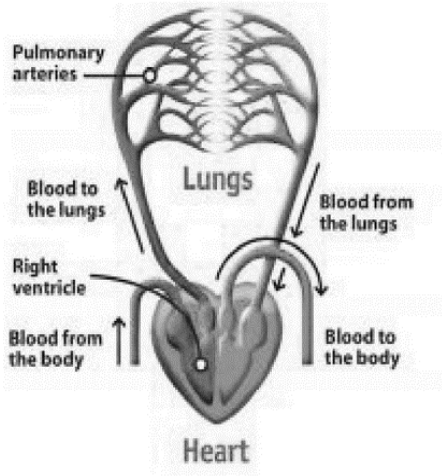
## ➢ Q. Draw the following:

### 1- White blood cell Types.




Practice here

### 3-Pulmonary blood Circulation

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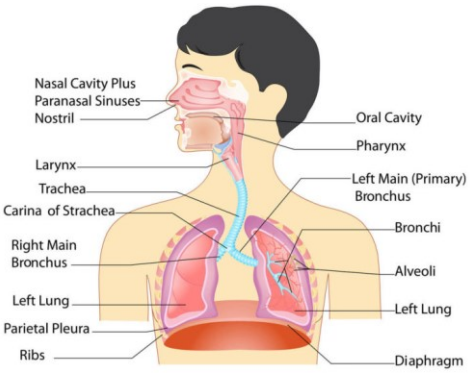
# Chapter { 5 }

# Respiratory System Question Banks

Chapter 5

# RESPIRATORY SYSTEM




## Q. Define the followings.

1. **Respiration:** It is a chemical operation which produces energy from food inside the living cells. In this process, food is burned by oxygen and energy is produced from food.

2. **Alveoli:** In the lungs, bronchioles (small branches) are subdivided into air sacs which consist of small rooms. These small rooms are called as alveoli.

3. **Diaphragm:** The thoracic cavity is separated from abdominal cavity by a muscular wall called diaphragm.

4. **Pleura:** Each lung is surrounded by a thin and double layer membrane called pleura.

5. **Internal respiration:** Gas exchange takes place between body tissues and blood; the oxygen passes from blood to body cells while needed energy is produced to perform metabolic activities in the body. At the end of this energy producing process, the carbon dioxide and water vapor are produced and they pass into the blood so blood becomes de-oxygenated. This operation of gas exchange is called **internal respiration.**

6. **External Respiration:** During the inhalation, the air enters the lungs and fills the alveoli which have thin walls. The oxygen diffuses from alveoli to the blood capillaries and blood becomes oxygenated. At the same time, the carbon dioxide and water vapor diffuse from blood to alveoli and they are re- moved by exhalation. This operation of gas exchange between the blood and alveoli is called **external respiration.**

7. **Vocal cords:** They are a pair of membrane which extend into the larynx cavity and connected with first cartilage at the top and third cartilage at the bottom. During the speech, the vocal cords vibrate and a sound is produced, because the air leaving from the lungs (exhaled air) passes over the vocal cords.

8. **Epiglottis:** It is a cartilaginous valve, which separates the pharynx from larynx opening. It prevents the entering of food molecules in to trachea

9. **Larynx:** Larynx is a cone shaped structure which is lined with mucous membrane and located above the trachea. It is known as voice box and it consists of nine pieces of cartilages (three single pieces and three paired pieces). These cartilages are combined with each other by an elastic membrane.

10. **Catarrhal Bronchitis:** is the inflammation of the bronchi. There are different types and degrees of catarrhal bronchitis, such as simple type which is not associated with increasing body temperature and strong type which is associated with increasing body temperature.

11. **Sneezing:** is your body's way of removing irritants from your nose or throat. A sneeze is a powerful expulsion of air that is involuntary, which means you cannot control it. Sneezing often happens suddenly.

## Q. Complete the followings.

1. The respiration is a chemical operation; its purpose is …… stored in the food.
2. The bronchi are branched in the lungs into smaller branches called …… which are subdivided into air sacs which consist of many small rooms called ……
3. …… It is a common passage between the digestive system and respiratory system.
4. ……It is a cone shaped structure which is lined with mucous mem- brane and located above the trachea.
5. ……is a valve which closes the larynx during swallowing. It prevents the entering of food molecules into trachea.
6. Inside the larynx cavity, there is a pair of membranes called …….. They are connected with first cartilage at the top and third cartilage at the bottom.
7. During the speech the vocal cords vibrate and sound is produced, because the air (exhaled air) leaving from the lungs passes over the vocal cords. For this reason, the larynx is called as ……
8. …… It is a tube which is located in the chest in front of the esophagus. Its length is 12 cm and its width is 2,5 cm.
9. Trachea is divided into two branches and each branch goes to each lung. These branches are called as ……
10. The main bronchi are divided into smaller branches which are called …… and located in the lungs.
11. The thoracic cavity is separated from abdominal cavity by a muscular wall called ……

12. Each lung is surrounded by a thin and double layer membrane called ……There is a space between these two layers, this space is called ……
13. This operation of gas exchange between the blood and alveoli is called ……
14. …… is the inflammation of the bronchi.
15. Koch's bacillus was discovered by …… in 1882.
16. It is a dangerous disease and caused by a bacteria called …… These bacteria infect the lungs and cause loss of function.

**Answers:**

1. releasing the energy.
2. Bronchioles, alveoli.
3. Pharynx.
4. Larynx.
5. Epiglottis.
6. vocal cords.
7. voice box.
8. Trachea.
9. Bronchi.
10. Bronchioles.
11. Diaphragm.
12. Pleura, pleural cavity.
13. external respiration.
14. Catarrhal Bronchitis.
15. Robert Koch
16. Pneumonia sp.

## Q. Write the locations of the followings.

| parts | locations |
|---|---|
| **Larynx** | Located above the trachea. |
| **Trachea** | In the chest in front of the esophagus. |
| **Alveoli** | At the end of bronchioles. |
| **Vocal cords** | Located in larynx. |
| **Pharynx** | between the digestive system and respiratory system |
| **diaphragm** | Found between thoracic cavity and abdominal cavity. |
| **pleura** | Cover the lungs. |
| **pleural cavity** | The space between the two layers of plural membrane |
| **pleural fluid** | Found inside the pleura membrane |

## Q. Write the locations of the followings.

| parts | Functions |
|---|---|
| **Vocal cord** | During the speech the vocal cords vibrate and sound is produced. |
| **Alveoli** | The exchange of gas between blood and environment occurs through the walls of the alveoli. |
| **Pleural fluid** | Pleural fluid which facilitates the working of lungs during breathing. |
| **epiglottis** | It prevents the entering of food molecules into trachea. |
| **vocal cords** | During the speech the vocal cords vibrate and sound is produced, |
| **Trachea** | Transport air to the lungs |
| **ciliated mucosal membrane in the inner surface of trachea** | The mucous glands secrete mucous which moistens the air and the cilia catch and throw out the foreign particles. |
| **diaphragm** | is separated The thoracic cavity from abdominal cavity. |

## Q. Write the causes for the followings.

1. **The larynx is called as voice box.**
   **Answer:** During the speech the vocal cords vibrate and sound is produced, because the air (exhaled air) leaving
   from the lungs passes over the vocal cords. For this reason, the larynx is called as voice box.

2. **During the speech the vocal cords vibrate and a sound is produced.**
   **Answer:** Because the air (exhaled air) leaving from the lungs passes over the vocal cords.

3. **Trachea consist of C shapes cartilages.**
   **Answer:** Because of this, trachea is not circle (ring shaped) completely. This structure helps esophagus to expand
   when the big food molecules pass through it.

4. **Presence of fluid between two layers of pleura membrane.**
   **Answer:** Facilitates the working of lungs during breathing

5. **The trachea is lined by ciliated mucosal membrane.**
   **Answer:** The mucous glands secret mucous which moistens the air and the cilia catch and throw out the foreign particles from the trachea such as dust and food particles.

6. **Presence of mucous layer in nasal cavity.**
   **Answer:** The mucous layer prevents the entering of dusts and other materials into the lungs. Also, the mucous membrane contains blood capillaries which warm the air that goes to lungs.

7. **Less activity and ability of the lung because of smoking.**
   **Answer:** The working of lungs is clearly reduced in smokers. Because gas exchange does not happen completely between the lungs and environment (example: oxygen and carbon dioxide). In smokers, harmful gases are exchanged with less oxygen during the breathing.

8. **Presence of hairs and mucous layer in nasal cavity.**
   **Answer:**
   1. Hairs and mucous layer block the passage of dusts, microbes and large particles such as sawdust.
   2. the mucous membrane contains blood capillaries which warm the air that goes to lungs.

9. **Why the food does not enter the respiratory pathway during eating.**
   **Answer:** Because there is a structure called epiglottis at the beginning of trachea. Epiglottis prevents the entering of food molecules into trachea

10. **Presence of epiglottis in the Larynx.**
    **Answer:** it prevents the entering of food molecules into trachea.

11. **The right lung in bigger than left lung.**
    **Answer:** the right lung has three lobs and the left lung has two lobs.

12. **Causes of Lung cancer.**
    **Answer:**
    1. Lung cancer is seen especially in men because of smoking much.
    2. The risk of lung cancer in smokers is 15-30 times more than in non-smokers.
    3. This percentage increases in smokers who swallow the smoke and start smoking at early age.
    4. The air contaminated with smoke and other materials which are produced from the factories, vehicles, trains and different mechanical engines.

**13. Causes of Pulmonary tuberculosis.**

**Answer:** This disease is caused by a rod-shaped bacteria called Koch's bacillus. This disease spreads out by means of some factors easily; such as very crowded places, malnutrition and lack of applied hygienic methods.

**13. Causes of Pneumonia. Answer:** It is a dangerous disease and caused by a bacteria called Pneumonia sp.

**14. Why The risk of lung cancer in towns is higher than in villages.**

**Answer:** The air contaminated with smoke and other materials which are produced from the factories, vehicles, trains and different mechanical engines. These factories, vehicles, trains and different mechanical engines use different types of fuels and kerosene or its products. Because of these reasons the risk of lung cancer in towns is higher than in villages.

## Q. Compare the followings. Q. Write the difference between the followings.

**1. Compare the inhalation and exhalation (respiration mechanism).**

| Inhalation | Exhalation |
|---|---|
| • During inhalation, diaphragm contracts and becomes flattened.<br>• intercostal muscles found between the ribs contract.<br>• inner pressure of the lungs decreases and the volume of chest cavity increases.<br>• At the end, the air passes through the respiratory organs and enters the lungs. | • During exhalation, diaphragm and ribs return to normal position.<br>• diaphragm relaxes and intercostal muscles relax.<br>• So, inner pressure of the lungs increases and the volume of thoracic cavity decreases.<br>• At the end, the expulsion of air from the lungs to outside happens. |

**4-What is different between External respiration and Internal respiration?**

| External respiration | Internal respiration |
|---|---|
| • During the inhalation, the air enters the lungs and fills the pulmonary alveoli which have thin walls.<br>• The oxygen is transferred from alveoli to the blood by the diffusion process and blood is oxygenated.<br>• At the same time, the carbon dioxide and water vapor diffuse from the blood to the pulmonary alveoli and they are thrown out by exhalation.<br>• It provides gas exchange between organism and environment. | • The oxygenated blood is transferred from the lungs to the heart by four pulmonary veins and then the blood is distributed into the all-body tissues by aorta.<br>• After that, the gas exchange takes place between body tissues and blood;<br>• the oxygen is transferred from blood to body cells and needed energy is produced to perform bio-activities in the body.<br>• At the end of the biological activities, the carbon dioxide and water vapor are produced and transferred into the blood so blood becomes deoxygenated.<br>• It provides gas exchange between blood and body cells. |

## Q. Answer the followings.

**1- Count the organs (parts) of human respiratory system?**

**Answer:** 1. Nasal cavity 2. Pharynx 3. Larynx 4. Trachea 5. Bronchi 6. Bronchioles 7. Alveoli

**2-Explain the lungs.**

**Answer:**

- The lungs are spongy and conical shaped organs.
- They are located in the chest cavity.
- The thoracic cavity is separated from abdominal cavity by a muscular wall called diaphragm.
- The right lung is bigger than the left lung.
- the right lung has three lobs and the left lung has two lobs.

**3-Write the characteristics of lung membrane.**

**Answer:**

1. Each lung is surrounded by a thin and double layer membrane called pleura.
2. There is a space between these two layers, this space is called pleural cavity.
3. This cavity contains small amount of fluid which facilitates the working of lungs during breathing.
4. This fluid is called as pleural fluid.
5. The inner layer of pleura attached to the lungs is called as visceral pleura membrane
6. The outer layer of the pleura attached to the walls of the chest is called as parietal pleura membrane.

**4-Explain the mechanisms of respiration.**

**Answer:**

- Inhalation, or breathing in, is the intake of air into the lungs.
- Exhalation, or breathing out, is the expulsion of air from the lungs.
- During inhalation: diaphragm contracts and becomes flattened and intercostal muscles found between the ribs contract. So, inner pressure of the lungs decreases and the volume of chest cavity increases. At the end, the air passes through the respiratory organs and enters the lungs.
- During exhalation: diaphragm and ribs return to normal position; diaphragm relaxes and intercostal muscles relax. So, inner pressure of the lungs increases and the volume of thoracic cavity decreases. At the end, the expulsion of air from the lungs to outside happens.

**5-What are the 2 differences between inhalation and exhalation?**

**Answer:**

During inhalation:

1-Diaphragm contracts and becomes flattened and intercostal muscles found between the ribs contract.

2-Inner pressure of the lungs decreases and the volume of chest cavity increases.

During exhalation:

1-Diaphragm and ribs return to normal position; diaphragm relaxes and intercostal muscles relax.

2-Inner pressure of the lungs increases and the volume of thoracic cavity decreases.

**6-What is the external respiration?**

**Answer:**

- During the inhalation, the air enters the lungs and fills the alveoli which have thin walls.
- The oxygen diffuses from alveoli to the blood capillaries and blood becomes oxygenated.
- At the same time, the carbon dioxide and water vapor diffuse from blood to alveoli and they are removed by exhalation.
- This operation of gas exchange between the blood and alveoli is called external respiration.

**7-Explain the internal respiration.**

**Answer:**

- Gas exchange takes place between body tissues and blood.
- the oxygen passes from blood to body cells while needed energy is produced to perform metabolic activities in the body.
- At the end of this energy pro during process, the carbon dioxide and water vapor are produced and they pass into the blood so blood becomes de-oxygenated.

**8-What are the infection ways of the pulmonary tuberculosis?**

**Answer:** 1-Very crowded places. 2-Malnutrition. 3-Lack of applied hygienic methods.

**9-What is the difference between the external respiration and internal respiration?**

**Answer:**

External respiration provides exchange of gas between organism and environment.
Internal respiration provides exchange of gas between blood and body cells.

**10-What are the infection ways (causes) of Whooping cough?**

**Answer:**

- It passes from a person to another by using the patient's tools contaminated with microbes coming from pharynx.
- when person exposures to volatile particles in the air because of patient's cough contaminated with microbes. These microbes pass from a person to another rapidly.
- The infection of this disease occurs by the respiratory system.

**11-Explain the gas exchange between the lungs and body cells.**

**Answer:**

1. The O2 passes from alveoli to blood capillaries by diffusion and it is transported by red blood cells from lungs to body cells.
2. The O2 passes from blood to body cell.
3. CO2 leaves from body cells.
4. Then CO2 passes to blood.
5. The red blood cells transport CO2 from body cells to lungs.
6. The CO2 passes from blood to alveoli and it is thrown out from the body.

**12-What is the effect of smoking on the respiratory system?**

**Answer:**

The smoking has a great harm especially on the respiratory system.
Smoking is the main cause of lung cancer, bronchitis, lung swelling and larynx cancer.

**13-Food does not enter the respiratory pathways during eating (why).**

**Answer:** Because there is a structure called epiglottis at the beginning of trachea. Epiglottis prevents the entering of food molecules into trachea

**14- How can you keep your respiratory system healthy?**

**Answer:**

1. Avoiding from smoking
2. Don`t spitting on the ground and using handkerchiefs
3. Doing exercises regularly like walking in uncrowned places
4. Taking food rich in calories and vitamins
5. Doing exercises regularly like walking in uncrowned places
6. Wearing suitable clothes during winter

## Q. Write the symptoms of the followings?

**1-Symptoms of Catarrhal bronchitis**

The patient infected with catarrhal bronchitis,

1. suffers from strong and dry cough. Then it changes to
2. productive cough contaminated with blood.
3. Patient's body temperature increases.
4. Sometimes, it is possible to hear strong sounds when the patient breathes because of the respiratory
   difficulties which last few days and then disappear; as a result, this condition changes to chronic disease
   and the patient becomes worse and coughs stronger.

**2- Symptoms of Pneumonia**

1. Body temperature increases.
2. Pale face, strong headache, tiredness and increasing heart rate.
3. Contaminated cough with greenish phlegm.

**3- Symptoms of Lung cancer**

1. Increasing body temperature and sweating at night.
2. Hard breathing and dry cough in early stages.
3. General weakness and inappetence.
4. Cough contaminated with blood in late stages.

### 4- Symptoms of Pulmonary Tuberculosis

1. inappetence.
2. losing ability to work.
3. feeling tired.
4. patient loses weight gradually.
5. At the beginning of this disease, patient suffers from slight and dry cough.
6. body temperature and sweating increase. If the disease continues, the strength of the cough increases especially during the night and it changes into productive cough contaminated with blood.

### 5- Symptoms of Asthma

1. Breathing difficulties.
2. Dry cough with vomiting
3. Pain in the chest.
4. Decreasing movement ability.

### 6- Symptoms of Whooping Cough.

**Answer: This disease has two stages:**

**1 Stage:** 1. inflammation of pharynx. 2. the upper part of trachea is inflamed and simple cough is seen.

3. This stage lasts about ten days.

**2 Stage:** 1. the coughing becomes heavier and changes toa strong attack. This attack lasts about 2-3 minutes and sometimes patient's vomit.

2. When the coughing attack increases, the patient's face become bluish or reddish, bleeding may happen in the nose and the lower regions of the eyes.

3. The coughing attack increases when the patient exposes to cold air and smoke.

## Q. Write the prevention of the followings?

### 1-preventions of Pulmonary tuberculosis disease

**Answer:**

1. Vaccination of the children with (B.C.G) vaccine in early age.
2. Spiting on the ground must be prevented.
3. We must take care of hygienic conditions in general places.
4. We must sterilize the milk and milk products.
5. When a person feels any symptoms of this disease, he must visit the physician.
6. Smoking and drinking alcohol is dangerous because it reduces the body immunity.
7. Good living conditions are provided, like good nutrition and fresh air.

**2- preventions of Lung cancer**

**Answer:**

1. stay away from polluted and bad ventilation places.
2. Avoid smoking or being around smokers in same room.
3. Avoid alcohol and none diagnosed drugs because they are weakening body immunity.

**3- preventions of Whooping cough**

**Answer:**

1. Vaccination of the children, with triple-vaccine once a month, for three months. This vaccination starts
   from the third month. The vaccination is repeated after one year. It contains the vaccines against the
   diphtheria, whooping cough and tetanus.
2. Keep out the children from contacting with infected patients.
3. Sterilization of the patients' tools contaminated with microbes, their rooms and beds.

**4- preventions of Pneumonia**

**Answer:**

1. Infected patients must be isolated.
2. Doing exercises and staying away from contaminated places.
3. Avoid smoking.
4. Using handkerchiefs while coughing.

**5- preventions of Asthma**

**Answer:**

1. Avoid smoking.
2. Wearing a mask or using wet towels if it is necessary. Especially during sand storms which are common in Iraq.
3. Doing exercises regularly like walking in uncrowded places.

**6-Preventions for Catarrhal bronchitis.**

**Answer:**

1. Pay high attention to self-cleaning.
2. Avoid staying in bad ventilated places.
3. Stay away from patients with such diseases.
4. Exercising regularly and eating food rich with Vitamin C.

## Q. Write the Remedies of the followings?
## Q. Write the treatments for the followings?

**1-Remedy (Treatments) for Catarrhal bronchitis.**

**Answer:**

1. Patient must take enough rest and drink much fluids as usual.
2. Decreasing body temperature by using wet towel.
3. Using handkerchief when coughing and sneezing.
4. Wearing suitable clothes during winter.

**2-Remedy (Treatments) for Pulmonary Tuberculosis.**

**Answer:**

1. Taking treatments according to physician instructions.
2. Eating food rich in proteins and vitamins.
3. Don' t smoke and avoid staying in smoking and polluted areas.
4. Keep away from physical activities during infection period,

**3-Remedy (Treatments) for Whooping Cough.**

**Answer:**

1. Visiting doctor is necessary if one of the symptoms is noticed.
2. Isolate the infected child from other children.
3. Child must be in good ventilated place.

**4-Remedy (Treatments) for Pneumonia.**

**Answer:**

1. Visiting the physician and taking the necessary antibiotics.
2. Taking food rich in calories and vitamins.
3. Providing the fresh air for patient.

**5-Remedy (Treatments) for Lung Cancer.**

**Answer:**

1. Visiting the physician when any of the symptoms seen.
2. Treatment may be needed chemotherapy or exposing to the radiation to prevent cancer cells separation.
3. Infected part of lung can be removed by medical surgery.

**6-Remedy (Treatments) for Asthma.**

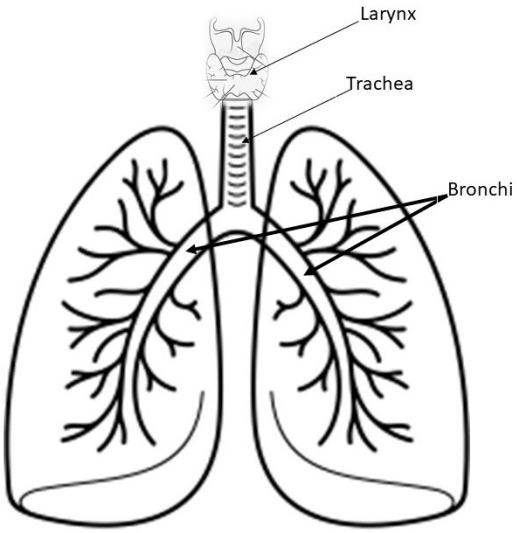
**Answer:**

1. Visiting the physician and taking necessary drugs
2. Using special sprays which dilate the bronchi.
3. Avoid being in crowded and polluted places.

# Q. Draw and label the following structure.

## 1. Draw and label the structure of lung Trachea and bronchi

Practice here




## 2. Draw and label the structure Lung Membranes.

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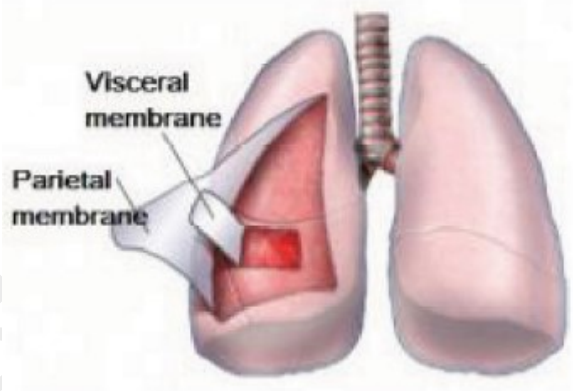
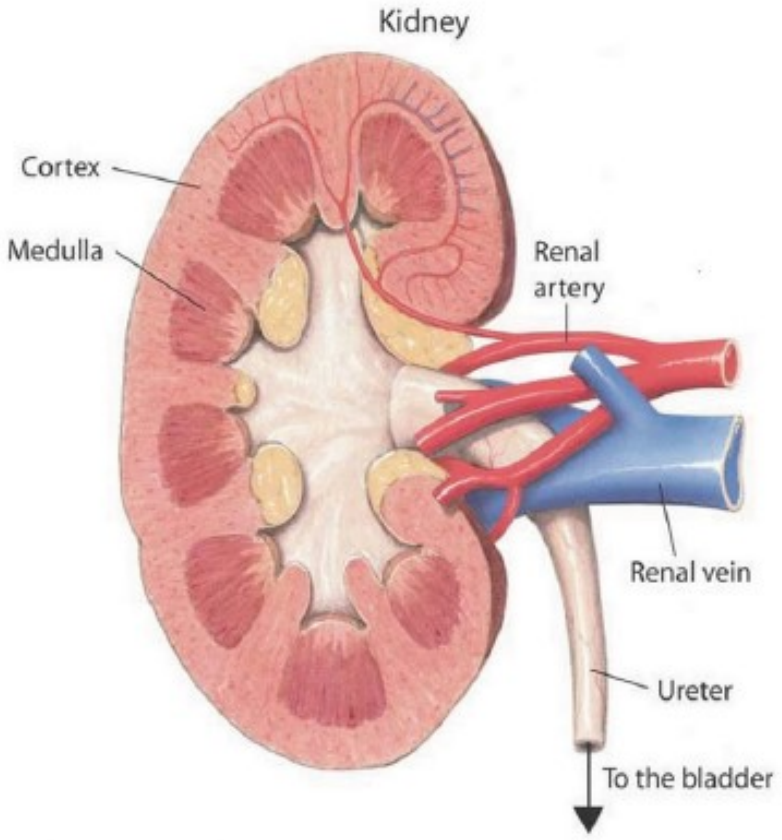


# Chapter { 6 }

# Excretion System Question Banks



Chapter 6

# EXCRETORY SYSTEM

## Q. Define the followings.

1. **Excretion:** It is an operation which throws out waste materials produced after metabolic activities in the body.

2. **Ureters:** They are muscular tubes which connect the kidneys and the back wall of the bladder. They transport urine from kidneys to bladder. Each ureter consists of smooth muscles and each one is 22 cm long.

3. **Cold sweating:** Sweating may happen as a result of psychological conditions such as fear. This type of sweating is called cold sweating.

4. **Sebaceous glands:** They are yellow color glands in the form of the bunch. They are distributed throughout the skin
except the palms. The sebaceous glands are associated with hairs and they secrete fatty liquids which keep the skin from cracking and drying. Also, fatty liquids provide waterproofing, brightness, flexibility and help the softening of
hairs.

5. **Sweat glands:** The sweat gland is a thin tube coiled at the base and situated in the dermis layer in the form of the mass gland. Sweat glands are surrounded by blood capillaries which carry sweat materials filtered into the sweat glands. The duct of the glands passes through skin layers and opens to the outward by a minute depression called These pores are found on the surface of the skin. In human skin, there are about two or three million sweat glands distributed throughout the body.

6. **Keratin layer:** is a tough substance composed of dead cells connected with each other. These dead cells are removed gradually from the body surface during washing or itching and replaced by new keratinized cells pushed out from germinative layer.

## Q. Complete the followings.

1. Kidney consist of two main layers cortex and medulla.
2. The urinary system consists of the following organs; kidney, ureter and urinary bladder.
3. The skin accessories are; hair, nail and skin glands.
4. There are three types of skin glands; sebaceous glands, mammary glands and sweat glands.

5. The ureter is a muscular tube; its length is 22 cm.
6. The epidermis consists of two layers; the outer layer is called keratin and the inner layer is called germinativum.
7. The skin is composed of two layers; the outer layer is epidermis and the inner layer is dermis.
8. The urinary system consists of the following organs; kidney, ureter and bladder.
9. The kidney consists of two main layers; cortex and medulla.
10. The skin accessories are hairs, nails and skin glands.

## Q. Write the locations of the followings.

| parts | locations |
|---|---|
| Kidney | Back wall of the abdominal cavity on each side of the vertebral column. |
| Ureter | Connect the kidneys and the back wall of the bladder. |
| Pelvis | Found in kidney |
| Sebaceous gland | Located in the skin |
| Nephrons | Found in kidney |

## Q. Write the locations of the followings.

| parts | Functions |
|---|---|
| Ureter | They transport urine from kidneys to bladder. |
| Urinary bladder | It is a sac which stores urine. |
| Nails | The nails protect the fingers and toe tips. |
| Germinative layer | Germinative layer consists of living cells which have ability to divide and produce new cells |
| Mammary gland | They secrete milk that contains nutrients for infant. |
| Insulin | insulin hormone decreases the blood sugar level. |

## Q. Write the causes for the followings.

1. **Sebaceous glands are secret fatty liquid over the skin surface.**
   **Answer:** They secrete fatty liquids which keep the skin from cracking and drying.

2. **Skin is important for balancing body temperature.**
   **Answer:** Skin discharges these wastes materials so it supports the excretion process. The human loses a great amount of water and salts through the skin.

3. **The clothes must not be too tight and adhere to the skin.**
   **Answer:** Because it limits the muscle movement and blood circulation (especially using the belt lighteners).

4. **Do not get tattoo on your skin.** **Answer:** Because it can cause allergic skin reactions.

5. **A person infected with proteinuria must reduce the number of salts in his food molecules.**
   **Answer:** Because the salts increase the ability of urinary tubules and consequently the filtration of protein particles increases.

6. **In the longitudinal section of the kidney, the cortex layer is seen as a dark spotted layer.**
   **Answer:** There are numerous Malpighi a body (Glomerulus and bowman's capsule) in the cortex of the kidney. So, it is seen as a dark spotted layer.

7. **The sebaceous glands are associated with hairs.**
   **Answer:** Because they secrete fatty liquids which keep the skin from cracking and drying. Also, fatty liquids provide waterproofing, brightness, flexibility and help the softening of hairs.

8. **The skin is important for keeping and balancing the body temperature.**
   **Answer:**
   - during the summer a great amount of sweat is produced. This sweat regulates the body temperature and cools the skin by evaporation. The heat is taken from the body and so body temperature decreases.
   - During the winter; when the blood capillaries which surround the sweat glands contract, the sweat production decreases. Then its evaporation is reduced from the body surface and this condition maintains the body temperature.
   - Also, a great amount of heat is lost from the body during the summer and skin reduces the losing of heat during the winter; this condition helps the skin to maintain the natural body temperature. Also, fat layer stored under the skin is known as heat isolator. This condition helps the body to maintain the body temperature.

9. **Insulin hormone is injected to the vein in the patients infected with diabetes mellitus.**
   **Answer:** Because insulin hormone decreases the blood sugar level.

# Q. Answer the followings.

**1-Explain the types of excretion in human.**

**Answer:**

1. **Digestive excretion:** Feces composed of undigested food materials, water, bacteria and dead cells, are thrown out by digestive tract.

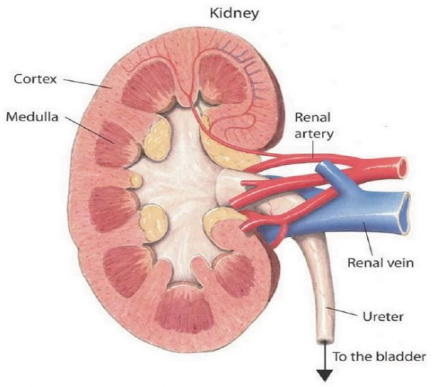
2. **Pulmonary excretion:** Carbon dioxide and water vapor are removed by respiratory system.

3. **Renal excretion:** Blood is filtered from excess amount of water and harmful materials such as urea and
then these wastes are thrown out by urinary system.

4. **Skin excretion:** Excess amount of water, salts, urea and small amount of C02 are thrown out by skin.

**2-Explain the structure of kidney.**

**Answer:**




- Kidney is bean shaped and its concave side towards the vertebral column.
- Kidneys are surrounded by a thin membrane called capsule.
- Each kidney consists of two main layers; cortex and medulla.
- Cortex is the outer layer of the kidney and it is red colored.
- Kidney consists of microscopic filtering units called nephrons.
- Medulla is the inner part of the kidney and it is bright colored. It is striped and similar to rays because it contains many urinary tubules.
- There is a cavity In the center of the medulla called as pelvis. It is the beginning of the ureter which extends inside the kidney.
- Renal arteries nourish the kidneys and renal veins remove the wastes from kidneys.

**3-Explain the structure of Epidermis.**

**Answer:**

- Epidermis is composed of two layers; outer layer called keratin layer and inner layer called germinative (Mallophagan) layer.
- the outer layer of the epidermis and contains no blood vessels and nerve branches.
- Keratin layer is a tough substance composed of dead cells connected with each other. These dead cells are removed gradually from the body surface during washing or itching and replaced by new keratinized cells pushed out from germinative layer.
- Germinative layer is the second layer of the epidermis. It is found under the keratin layer.
- Germinative layer consists of living cells which have ability to divide and produce new cells. This layer contains the nerve fibers ends and sweat gland ducts but contains no blood vessels, for this reason it gets nutrients from blood plasma filtered from dermis layer. The color of skin depends on pigment materials in the germinative layer. If a person exposure to the sun light, these pigments materials increased.

**4-Explain the glands found in dermis?**

**Answer:**

This layer consists of living tissues and contains connective tissue, blood vessels and nerves. The connective tissue gives elasticity and strength to the skin. The surface of the dermis layer is wavy and this wavy structure forms dermis papillae. The walls of dermis papillae contain blood vessels and nerve ends which represent the sense of touch in the human?

**5-What is the origin of nail.** **Answer:** They are thin keratinized threads originated from epidermis layer.

**6-Explain the factors effect on sweating?**

**Answer:** Muscular activity (hard exercise) increases the sweating such as running. Also, sweating increases in the case of tiredness.

**7-How can we take care of the skin?**

**Answer:**

**1-** Have bath periodically.
**2-** Keep your skin away from strong sun light.
**3-** Don`t press on adolescent acne, they are natural result of some hormones.
**4-** Don`t get tattoo on your skin because it can cause allergic skin reactions.
**5-** The clothes must not be too tight and adhere to the skin.
**6-** We must visit the physician when we notice the appearance of some skin diseases or appearance of abnormal symptoms on the body such as scarring or spots and others.
**7-** The internal clothes which contact the skin must not be tough and harsh such as woolen clothes which irritate the skin and cause the scratching.

**8-Write the types of excretion in human.**

**Answer:**

A) Digestive excretion B) Renal excretion C) Pulmonary excretion D) Skin excretion

**9-Write the organs of urinary system in human and which one performs the blood filtration.**

**Answer:** The urinary system consists of Kidney, Ureter, Urinary bladder and Urethra.
The blood filtration is performed by kidney.

**10-Explain the hair shortly.**

**Answer:** It is thin keratinized threads originated from epidermis layer. Each hair consists of hair shaft, hair follicle, hair root and sebaceous glands.

**11-What are the functions of skin.**

**Answer:**

1- Skin protects the inner organs from outer effects.
2- Skin provides excretion by sweating.
3- Skin plays an important role in regulation of body temperature by sweating.
4- Fat layer stored under the skin is known as heat isolator. This condition helps the body to maintain the body temperature.
5- Skin provides the water and salt balance in the human body by sweating.
6- Finally, skin detects the feeling of touch.

## Q. Write the symptoms of the followings?

**1-Symptoms of Kidney stone:**

1. Patient urinates frequently and feels sever pains in the lumbar region or the body sides.
2. Sometimes bloody-urination occurs because of injuries in the walls of urinary tract. These injuries are
   caused by stones.
3. Renal colic occurs due to the movement of stones.

**2-Symptoms of Diabetes Mellitus:**

1- getting tired very quickly. 2- loss of weight. 3- Thirst. 4- repetition of urination.

**3-Symptoms of Albuminuria.**

1- Anemia and pale face. 2- Yellowish urine with hyper urination.
3- Burning during urination due to urinary tract in floatation. 4- Many red pumpless seen on legs.

## Q. Write the Remedies of the followings?
## Q. Write the treatments for the followings?

### 1-Treatments of Kidney stone:

1- Patients must reduce eating the food which contain phosphate and oxalate such as tomato.
2- Advise the specialist physician immediately.

### 2-Treatments of Diabetes Mellitus:

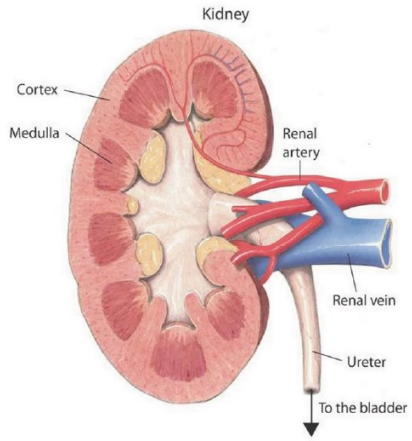
1. Infected person is treated by injecting insulin or taking tablets which help to reduce the sugar level in the blood. So, the taken insulin substitutes the deficiency of insulin hormone which is secreted by the pancreas.
2. Also, the patients must eat food materials which contain less starch and sugar.

### 3-Treatments of Albuminuria:

1- Reduce the protein and salts in food
2- Drink more water.

# Q. Draw and label the following structure.

## 1-The cross section of kidney

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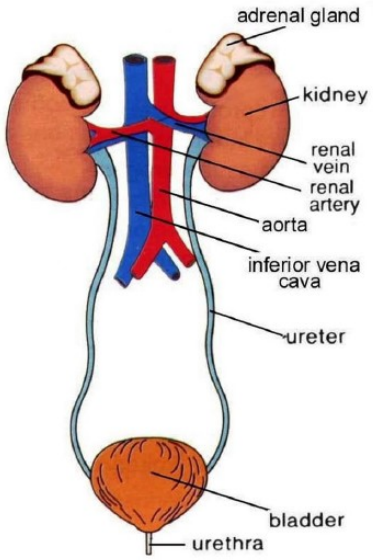
## 2-The Urinary system

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# Chapter { 7 }

# Reproductive System Question Banks

Chapter 7

# REPRODUCTIVE SYSTEM

## Q/ Define the followings.

- **Reproduction:** It is the production of new individuals (children) more or less similar in form to the parent organisms.
- **Menstruation:** If the ova is not fertilized, it is discharged from body with blood, mucus and some tissues by a process called menstruation.
- **Fertilization:** It is the union of sperm nucleus and egg nucleus to form fertilized egg (zygote).
- **Placenta:** It is a disc-shape organ located between the fetus and uterus. It provides oxygen and nutrients to fetus from mother's blood and transports harmful materials which are produced by the fetus to mother's blood.
- **Umbilical Cord:** It is a cord which connects the fetus with placenta. It transports oxygen and nutrients from placenta to fetus and transports harmful materials and carbon dioxide which are produced by the fetus from fetus to placenta. It is cut during the birth.
- **Premature:** Sometimes birth process happens before nine months, about 7th month, in this case embryo is called as premature.
- **Sterility:** It means having no ability of producing sperm or ovens in man or woman.
- **Egg:** It's a female reproductive cell.
- **Sperm:** It is a male reproductive cell.
- **Fallopian tube (Oviduct):** Oviduct is a tube which transports egg from ovary to uterus. The beginning of oviduct is funnel shaped and covers ovary partially.

## Q/ Fill in the blanks correctly?

1. The female reproductive system consists of …… , …… , ……
2. Male reproductive system consists of …….. which produce sperms, …….. which pass through these glands and …….. which facilitate the sperm transmission.
3. Ovaries are two glands, oval shaped and located ……
4. The associated glands of male reproductive system are …… And ……..
5. The fetus obtains the nutrients and oxygen from the mother's blood through the …….. and……

***Answer:***

1. Uterus, ovary and oviduct.
2. Glands, Duct, and Additional organs
3. In the lower part of the abdominal cavity.
4. Prostate and Cowper's glands.
5. Placenta and umbilical cord.

## Q/ What is the location of followings?

| Body Parts | Locations | Functions |
|---|---|---|
| **Reproduction** | | Reproduction is the production of new individuals (offspring). The main purpose of reproduction is to continue the existence of the liv-ing things. |
| **Testes** | Male Reproductive System | produce male reproductive cells called sperms and hormones which are responsible for secondary sexual characteristics in male such as beard and mous-tache. |
| **Vas-deferens ducts** | Male Reproductive System | transport sperms from testis (or epididymis) to urethra. |
| **Epididymis** | at the beginning of each vas-deferens duct. | Sperms are stored here till maturation. |
| **Seminal Vesicles** | at the end of each vas-deferens duct nearby the neck of bladder. | They store sperms after maturation. |
| **Prostate Gland** | Male Reproductive System | They secrete different liquids to protect, maintain and to facilitate the movement of sperms |
| **Cowper's Glands.** | Male Reproductive System | They secrete different liquids to protect, maintain and to facilitate the movement of sperms |
| **Ovary or ovaries** | At the lower part of abdominal cavity at both sides of the uterus. | is responsible for producing egg and hormones which are responsible for secondary |
| **Oviducts (Fallopian tubes)** | Female Reproductive System | Transport egg from ovary to uterus |
| **Uterus** | Female Reproductive System | The embryo develops in the uterus |
| **placenta** | Between the embryo and uterus | provides oxygen and nutrients to embryo from mother's blood and transports harmful materials produced by embryo to mother's blood |
| **umbilical cord.** | Connect the embryo with placenta | provides oxygen and nutrients to embryo from mother's blood and transports harmful materials produced by embryo to mother's blood |

## Q/ Who is responsible for the followings?

| Processes | Responsible |
|---|---|
| Production of new individuals (offspring) | Reproduction |
| produce male reproductive cells called sperms and hormones which are responsible for secondary sexual characteristics in male such as beard and mous-tache. | Testes |
| transport sperms from testis (or epididymis) to urethra. | Vas-deference duct |
| Storing sperms till maturation | Epididymis |
| Storing sperms after maturation | Seminal Vesicles |
| secrete different liquids to protect, maintain and to facilitate the movement of sperms | Prostate Gland and Cowper's Glands. |
| producing egg and hormones which are responsible for secondary | Ovaries |
| Transport egg from ovary to uterus | Oviduct (fallopian tubes) |
| provides oxygen and nutrients to embryo from mother's blood and transports harmful materials produced by embryo to mother's blood | Placenta and Umbilical cord |
| protects the mother from different disorders like breast can-cer and supports the immunity system of embryo. | Nursing infant from the mammary glands |
| increase in miscarriage and premature birth or embryo death, | Smoking |
| Sterility | hormonal defici-ency, genetical diseases or disorders of reproductive organs. |

## Q/ Answer the following questions.

1-Write the secondary sexual characteristics human.

Answer:

1. The hair density in the male body is more than the female body.
2. The breast growth and milk secretion happen in the female but these are inactive in the male.
3. The voice of male is sharper than the voice of female.

**2-What is the effect of smoking on the reproductive system (genital)?**

Answer:

1. Babies whose weights are less about 150-240gm than normal weights.
2. lose their babies because of abortion or fetus death during the first few weeks of pregnancy.
3. babies are more susceptive for lung inflammation during the first year of their lives; this will be doubled if the parents are smokers.

## Q/ What are the differences between the followings.

1-Identical twins and non-identical twins.

| Identical twins | Non-identical twins |
|---|---|
| 1-They are matured from one egg.<br>2-They have same sex.<br>3-They have same genetic characteristics. | 1-They are matured from two or more eggs.<br>2-They can be different sex.<br>3-They have different genetic characteristics |

Q/ Write the cause of the followings:

1-Some children called as identical twins. Or Give birth to identical twins?

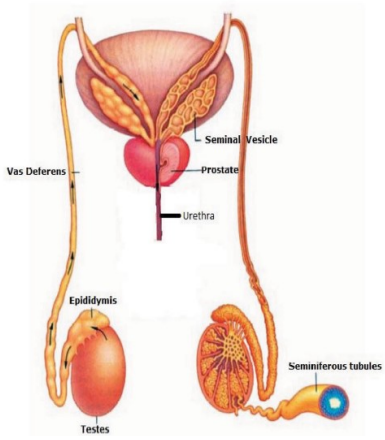
Answer: These two embryos developed from the same fertilized egg which divided into two independent cells after fertilization. These embryos have the same sex (male or female) and generally same somatic characteristics
(They look like each other).

## Q2-Draw the followings and write the names of the parts.

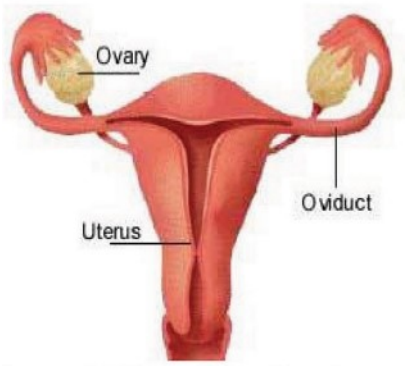
1-The male reproductive system (genital).

2- The female reproductive system (genital).

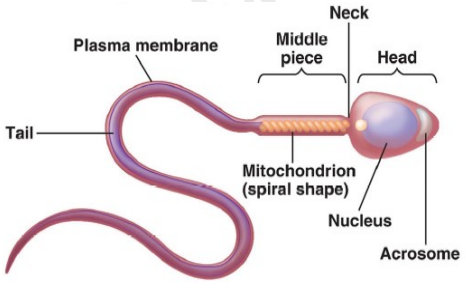
3- The sperm and Egg.

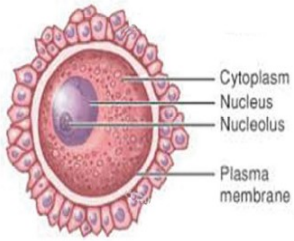



1-The male reproductive system (genital).




2- The female reproductive system



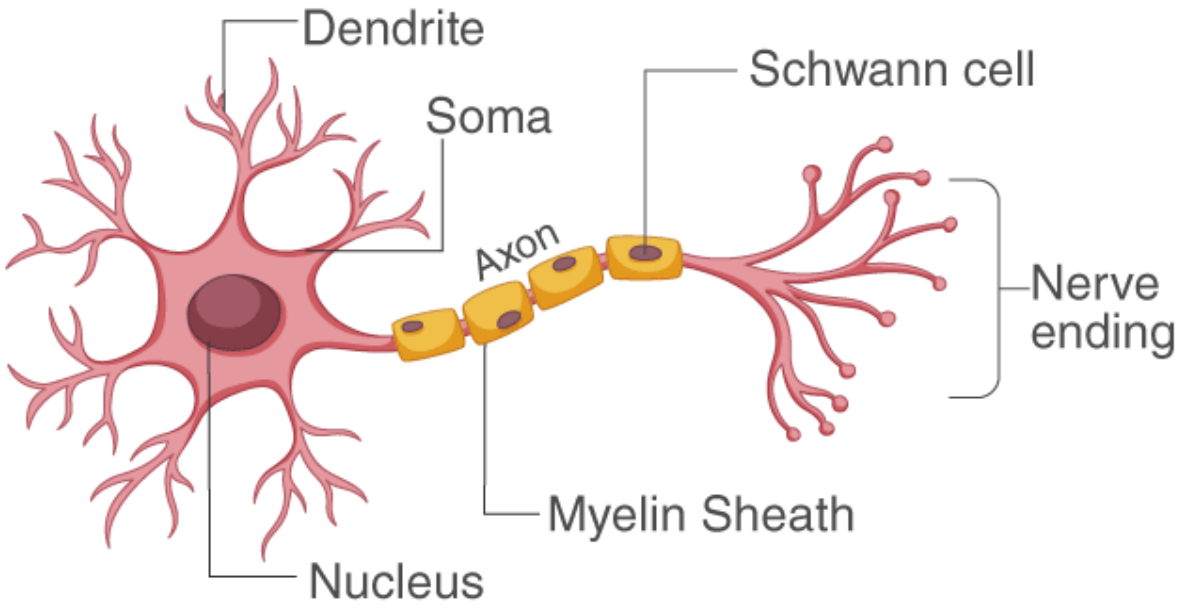




3- The sperm and

# Chapter { 8 }

# Nervous System Question Banks

**STRUCTURE OF NEURON**



Chapter 8

# NERVOUS SYSTEM

## Q/ Define the followings.

**Nerve cell:** The nerve cell is a principal unit of nervous system. The nerve cell consists of a large cell body and cytoplasmic extensions extended from cell body. Nerve cell transports neural stimuli in the nervous system.

**Reflex actions**: They are the movements and functions which are done by human without thinking, such as pulling the hand suddenly if it is touched by a hot object or pierced by a pin etc.

**Nerve impulses**: The changes that happen in neurons during the transmission of stimuli through the neurons are called nerve impulses.

**Nervous tissue**: Nervous tissue is formed by accumulation of nerve cells. If this tissue is formed by accumulation of nerve cell bodies, the color of this tissue becomes grey; such as the cortex of cerebrum and cerebellum. If this tissue is formed by accumulation of nerve axons, the color of this tissue becomes white; such as the outer part of the spinal cord and deeper part of the cerebrum.

**Meningeal membrane:** The brain is surrounded by three membranes known as Meninges.

**Synapse:** It is the contact place of fine branches of cell axon with fine branches of adjacent cell dendrites. It is a point that transfers nervous stimulus between two nerve cells.

## Q/ Fill in the blanks correctly.

1. Nervous tissue consists of special cells called as .....
2. Central nerves system consists of .....and.....
3. The brain is located in .....cavity which is surrounded by three membranes known as.....
4. The number of cranial nerves is about. .....
5. There are.....pairs of cranial nerves and .....pairs of spinal nerves.
6. The nerve cell consists of a large .....and .....
7. The shape of the nerve cell maybe ..... , ..... Or .....
8. Axon is mostly surrounded by a sheath called as..... It is formed from.....
9. There are two types of nerves they are ..... And .....
10. Brain is consist of the following parts ..... , ..... and .....
11. Peripheral nervous system consists of ..... , ..... and nerves of .....

12. Types of nervous actions ……. , ……. And ……
13. Autonomic nervous system is divided into two groups …… and …….

## Answers:

1. Neuron.
2. Brain and Spinal cord
3. Skull, Meninges
4. 12 pairs
5. 12 pairs, 31 pairs
6. Cell body, Cytoplasmic Extinctions
7. Spherical, Oval or star
8. myelin sheath, Schwann cells
9. Motor nerves and sensory nerves
10. Cerebrum, Cerebellum and Medulla Oblongata
11. Spinal nerves, cranial nerves and autonomic nervous system
12. Voluntary actions, Involuntary actions and Reflex actions
13. Sympathetic and Parasympathetic

## Q/ Write the Functions and locations of the followings:

| Body Parts | Locations | Functions |
|---|---|---|
| **Nerve Cell** | nervous system | transports neural stimuli in the nervous system. |
| **dendrites.** | Nerve Cell or (Neuron) | transport the neural stimuli towards the cell body |
| **axon.** | Nerve Cell or (Neuron) | transports neural stimuli from the cell body. |
| **myelin sheath** | Surround the axon of the neuron cell | accelerates the trans-mission of neural stimuli in the axon and isolates the axon from other axons. |
| **Schwann cells** | Surround the axon of the neuron cell | Form the myelin sheath |
| **Sensory nerves** | nervous system | transmit stimuli from sensory organs such as the eye, ear and skin to the central nervous system. |
| **Motor nerves** | nervous system | transmit the impulses from the central nervous sys-tem to muscles organs and glands. |
| **brain** | in the skull cavity | |
| **meninges** | Surround the brain | |
| **Cerebrum** | brain | Controls and regulates the voluntary actions. |
| **cerebral cortex** | outer layer of the cerebrum | |
| **Cerebellum** | lies below the posterior part of Cerebrum | Cerebellum coordinates the movement of the voluntary muscles in the body |

| | | |
|---|---|---|
| **Medulla Oblongata** | at the posterior part of the skull cavity base. It con-nects the brain with the spinal cord. | controls some body systems such as respiratory system, circulatory system especially heart rate |
| **Spinal Cord** | rom the end of medulla oblon-gata to the end of the last lumbar vertebra. | Reflex action center |
| **Peripheral Nervous System** | | conduct the responds from Central nervous system to all body organs such as muscles and glands. |
| **spinal nerves** | Peripheral nervous system | |
| **cranial nerves** | Peripheral nervous system | |
| **Autonomic Nervous System** | | transfer the orders from the central nervous system to the body organs that work involuntary such as regulation of heartbeat, breathing, sweating and others. |
| **Sympathetic System** | Autonomic Nervous System | functional during emergency. For example; it accelerates the heart beats and respiration rate. |
| **Parasympathetic System** | Autonomic Nervous System | restores body to resting state after stressful situation. For example; it decreases the heart beats |
| **Reflex Actions** | Spinal Cord | |

## Q/ Write the cause of the followings:

1- The nerve cell axon is surrounded by myelin sheath.

Answer: Myelin sheath accelerates the trans-mission of neural stimuli in the axon and isolates the axon from other axons.

2- The cerebral cortex is gray in color while the deeper part is white in color?

Answer: Nervous tissue is formed by accumulation of nerve cells. If the tissue is formed by the cell bodies, the color of the tissue is grey.
If the tissue is formed by the ax-ons, the color of the tissue is white such as outer part of spinal cord and inner part of cerebrum.

3- Depression? Answer: Noise, Over working, Anxiety and Smoking

4- Schizophrenia?

Answer: It is an inherited disease which caused by non-functional of an enzyme which involved in nervous functioning. And this cause abnormal functioning of nervous system.

## Q/ Give an example for the followings.

1. **Voluntary nervous action:** → Speech, hearing, learning, Walking, Sport games and doing hard work
2. **Involuntary actions:** → Heartbeats, Movement of the (stomach, Intestine and lungs)
3. **Reflex actions:** → Pulling the hand suddenly if it's touched by a hot object or pierced by a pin.
4. **Nerve tissue gray in color:** → Cortex cerebrum and cerebellum
5. **Nerve tissue white in color:** → Outer part of spinal cord and inner part of cerebrum

## Q/ Answer the following questions.

1-Explain structure of neuron (nerve cell).

Answer: The nerve cell consists of a large cell body and cytoplasmic extensions extended from cell body. Nerve cell transports neural stimuli in the nervous system. Cell body contains a large nucleus located in the center. The shape of the nerve cell depends on these cytoplasmic ex-tensions; its shape may be spherical, oval or star. Some of these exten-sions are short, numerous and branched called dendrites. They trans-port the neural stimuli towards the cell body. And also, there is a unique, long and thick extension called axon. Axon transports neural stimuli from the cell body.

2-Explain the types of nerves.

Answer:

1. Sensory nerves; transmit stimuli from sensory organs such as the eye, ear and skin to the central nervous system.
2. Motor nerves; transmit the impulses from the central nervous sys-tem to muscles organs and glands.

3-Write types of nerves and their functions.

Answer:

1. Sensory nerves: transmit stimuli from sensory organs such as the eye, ear and skin to the central nervous system.

2. Motor nerves: transmit the impulses from the central nervous sys-tem to muscles organs and glands.

4-Explain the cerebellum.

Answer: The cerebellum lies below the posterior part of Cerebrum. It con-sists of two symmetrical hemispheres. Cerebellum coordinates the movement of the voluntary muscles in the body. The damage of the cerebellum causes disorders and imbalance at muscular actions.

5-Explain the medulla oblongata.

Answer: It is located at the posterior part of the skull cavity base. It con-nects the brain with the spinal cord. It controls some body systems such as respiratory system and circulatory system

6-Explain the spinal cord.

Answer: It is cylinder cord is about 45cm from the end of medulla oblongata to the end of the last lumbar vertebra. Spinal cord is passing through vertebral column.

7-Explain the types of nerves actions.

Answer:

**1. Sympathetic System:** The fine nerves of Sympathetic System are distributed in the internal organs and blood vessels. The sympathetic system is functional during emergency. For example; it accelerates the heart beats and respiration rate.

**2. Parasympathetic System:** It includes a large group of nerves; start from brain centers some of them start from lower part of the spinal cord. The parasympathetic system restores body to resting state after stressful situation. For example; it decreases the heart beats.

8-Write types of nervous action and give an example for each.

Answer:

**1. Sympathetic System:** it accelerates the heart beats and respiration rate.

**2. Parasympathetic System:** it decreases the heart beats.

9-Explain the reflex action by example.

Answer: Located in spinal cord they are the movements and functions which are done by human without thinking, such as pulling the hand suddenly if it is touched by a hot object or pierced by a pin etc.

10-Explain the transmission of nervous stimulus.

Answer: The transmission of these stimuli is done by neurons via electrical phe-nomenon which produces electricity that is transferred from cell axon to another adjacent cell body. The changes that happen in neurons during the transmission of stimuli through the neurons are called nerve impulses.

11-Explain the treatment and prevention from depression.

Answer:

1. we must follow safe health directions.
2. take care of personal health which includes body cleanliness
3. take care of residence, clothes and food cleanness.
4. We must avoid continuously hard working and weariness.
5. We must rest and avoid sleeplessness continuously.
6. we must adopt ourselves to go to bed early.
7. have enough time for a rest and stability.
8. We must get rid of bad habits and stop passive practices (such as narcotics, tranquillizers, alcohol and smoking).

## Q/ Compare the following.

Sympathetic and Parasympathetic system

Answer:

**1. Sympathetic System:** The fine nerves of Sympathetic System are distributed in the internal organs and blood vessels. The sympathetic system is functional during emergency. For example; it accelerates the heart beats and respiration rate.

**2. Parasympathetic System:** It includes a large group of nerves; start from brain centers some of them start from lower part of the spinal cord. The parasympathetic system restores body to resting state after stressful situation. For example; it decreases the heart beats.

## Q/ Write the symptoms of the following?

1. symptoms of Schizophrenia

Answer:

1. Decreasing in concentration and memory abilities.
2. Aggressive and abnormal behaviors also lack of communication with other people.
3. Insomnia and losing ability of doing daily works.

2. symptoms of Depression.

Answer:

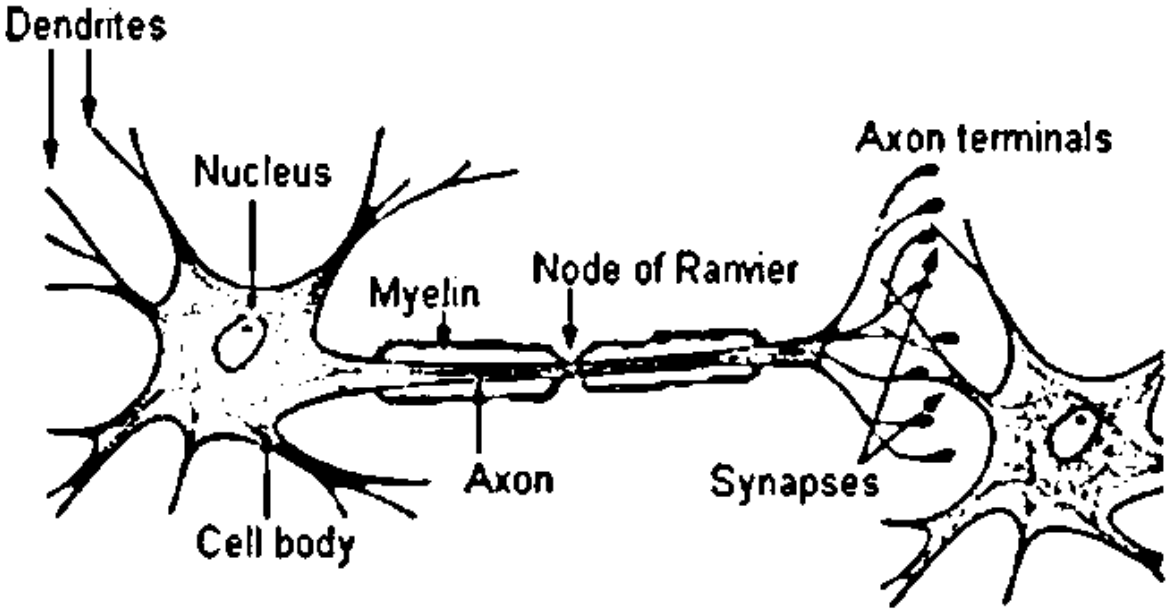
1- General tiredness
2- Disenchanting with community.
3- Over reacting, anger, lose of attention.

## Q/ Write the prevention of the following?

Answer: Providing good living conditions and working conditions for individuals who have probability to be infected by this disease.

## Q/ Draw the following:

1-The structure of neuron and name the parts it.



# Chapter { 9 }

# Sence Organs Question Banks

Chapter 9

# SENSE ORGANS

## Q1-Define the followings.

1. Yellow spot: It is a small region of retina in which photoreceptors are concentrated or most closely packed. This region is called yellow spot (fovea). It is very sensitive to light.

2. Round window: It is an opening which is covered by special membrane and connects middle ear with inner ear. The blood vessels feeding the ear pass through this opening.

3. Blind spot: There are no photoreceptors where the optic nerve leaves the retina; we cannot see the body images falling on it. Since there can be no vision at this part and it is called as blind spot. Blind spot is located below the yellow spot on a distance of 6 mm from it.

4. Eustachian tube: Middle ear is connected with pharynx through a special canal called Eustachian tube. The function of Eustachian tube is to equalize the air pressure on both sides of eardrum.

5. Semilunar Canals: They consist of three tubes located in three vertical planes. Each canal looks like an arched tube. The chambers of these canals are filled with lymphatic fluid. Their main function is maintaining body balance.

6. Oval window: It is an opening which is covered by special membrane and connects middle ear with inner ear. The sound waves going to the inner ear pass through oval window.

7. Taste bud: The taste receptors diffused on the surface of tongue are called taste buds. Tate buds perceive taste and consist of long ciliated cells; their sense fibers extend to the brain.

8. Acne: They are temporary swellings which appear on the face due to the hormonal changes. Face must be washed daily by water and pim-ples mustn't be touched because they disappear gradually.

## Q2-Complete the followings.

1. The outer ear contains a cartilage part called .....
2. The bitter taste buds are located at .....of tongue, while the sweet taste buds are located at .....of the tongue.
3. The salt taste buds are located on the .....of tongue. The bitter taste buds are located at .....of tongue.
4. The eye is located inside a special cavity found in the frontal bone which is called .....

5. The nose secretes a mucous material which helps .....
6. The eye is the best way for human, by which he can distinguish the .....
7. The eye is located inside a special cavity called .....in the frontal bone.
8. Generally, sense organ consists of two part they are .....and .....
9. The taste receptors diffused on the surface of tongue are called.....
10. The inner surface of the nasal cavity is covered by a fine membrane called.....
11. Also eyes are connected with ..... which secrete tear to wash the eyes from dust or foreign particles

***Answers:***

1. Pinna
2. Back, tip
3. Edge, back
4. Eye orbit
5. Warm the ear
6. World around us
7. Eye orbit
8. Principal part and accessory part
9. taste buds
10. mucous membrane
11. tear glands

***Q3-Write the places (location) and the functions (responsibilities) of the followings of the followings.***

| Body parts | Locations | Functions |
|---|---|---|
| Senses | | Detect the stimuli and to maintain the body. |
| Taste buds | Diffused on the surface of tongue | Perceive taste |
| Sweet buds | Located on front tip of tongue | |
| Sour buds | Located back sides of the tongue. | |
| Salt buds | Located on the front sides of the tongue | |
| Bitter buds. | Located on the end tip of tongue | |
| Sinuses | In the skull | |
| Eye | Located inside a special cavity called eye orbit in the frontal bone | Helps the human to recognize the world around us |
| Conjunctiva. | Covers the front part of the eye | Covers the front part of the eye |
| Tear glands | Connected with eye | Secrete tear to wash the eyes from dust or foreign particles that may enter and damage the eye. |
| Sclera | The outer layer of the eye sphere | |
| Cornea | The front of the sclera | |
| Choroid | It is middle part of eye sphere | |
| Pupil | In center of iris | Allow light to enter the eye |
| Iris | Located in front of lens | Gives eye color |
| Lens | Behind the iris | |
| Retina | The inner layer of the eye | |
| Yellow spot | A part of retina where the photoreceptors are concentrated or most closely packed. | |
| Blind spot | Beneath the yellow spot | |
| Anterior chamber | Located between the lens and cornea | Is filled with a liq-uid called aqueous humor |
| Posterior chamber | Located behind the lens | This chamber is filled with a liquid called vitreous humor |
| Auricle | Outer Ear | |
| Auditory canal | Outer Ear | Collects the sound waves and transports them from air to the middle ear. |

| | | |
|---|---|---|
| Outer ear | | Collects the sound waves and transports them from air to the middle ear. |
| Eardrum | Located between the outer ear and middle ear. | The sound waves vibrate the eardrum and move the bone of meddle ear |
| Eustachian tube | Between the Middle ear and pharynx | Equalize the air pressure on both sides of eardrum |
| Round window | Between the middle ear and inner ear | |
| Oval window | Between the middle ear and inner ear | |
| Malleus | In the Middle ear | Transfer the sound waves into the inner ear |
| Stapes | In the Middle ear | Transfer the sound waves into the inner ear |
| Incus | In the Middle ear | Transfer the sound waves into the inner ear |
| Middle ear | Between outer and middle ear | Connect the outer ear to the inner ear |
| Inner ear | Located within the temporal bone cavity | Hearing and body balance |
| Cochlea | Inner Ear | Hearing |
| Semilunar canals | Inner Ear | Body balance |
| Basilar bone | Cochlea of the inner ear | |
| Basil membranes | Cochlea of the inner ear | |
| Perilymph | Cochlea of the inner ear | |
| Endolymph | Cochlea of the inner ear | |
| Lymphatic fluid | Semilunar Canals of the inner ear | |

## *Q4-Write the causes of the followings.*

1-The shades of the bodies are not seen, if they are located on the blind spot.

Answer: Because there is no photoreceptor on this region, for this reason we can't see the body images.

2-The cross-eye (squint) occurrence in human.

Answer: Eye muscles may not have the same strength and efficiency, for this reason the weak eye that has weak muscles is directed to inside or outside, this abnormal condition is called cross-eye (squint). In the case of cross-eye, the eyes do not have the same sight strength and each eye look in a different direction.

3-When hearing the high voice, the mouth must be open.

Answer: For balancing the air pressure on both sides of the eardrum and preventing the eardrum from damages.

4-Presence of aqueous humor and vitreous humor in eye.

Answer: These liquids maintain the eye shape and help the light rays to reach the retina without dispersion.

5-The necessity of presence of pain receptor cells (nerve cells specialized for pain) in the body.

Answer: These receptor cells alarm the body for the dangers and make the human more careful.

6-The eye may be inflamed when the nose is inflamed.

Answer: Because there is a connection canal between eye and nose which is called as nasal duct, for this reason the eye is inflamed when the nose is inflamed.

7- Germinative layer contains no blood vessel but gets nutrient.

Answer: it gets nutrients from blood plasma filtered from dermis layer.

8- Albinism?

Answer: Disorders in melanin secretion cause changes in skin colour.

9- Trachoma?

Answer: A special virus causes this disease. Some small granules are formed on the internal surface of the eyelids in the case of the trachoma.

10- Nail originated?

Answer: they are originated from epidermis.

## Q5-Answer the followings.

### 1-Explain the structure of middle ear.

It is an unregulated cavity which extends to the inner cavities. Middle ear connects the outer ear and inner ear. Between the outer ear and middle ear, there is a membrane called eardrum, so eardrum connects the outer ear and middle ear. Also, between the middle ear and inner ear, there are two openings covered with special membrane. These two openings are called round window and oval window. Middle ear is connected with pharynx through a special canal called Eustachian tube. Inside the middle ear, there are three small bones which transfer the sound waves into the inner ear. These bones are incus, malleus and stapes.

### 2-What is the myopia? What is the cause of it? How is it treated?

**Definitions:** It is a functional eye disease and occurs mainly in childhood. The infected person cannot see the far object clearly but the healthy person can see these objects clearly and naturally. This bad condition may last after childhood.

**Cause:** Myopia happens as a result of increasing the convexity of lens or increasing the convexity of cornea or increasing the length of eyeball. So, the image forms in front the retina and the far objects cannot be seen well.

**Treatment:** Myopia is treated by wearing concave lens used for dispersing the light rays (glasses or contact lenses).

## 3-What are the difference between myopia and Hypermetropia?

| Myopia | Hypermetropia |
|---|---|
| **1. This disease occurs mainly in childhood.** | 1. It occurs after 40 years old. |
| **2. The infected person can not see the far object clearly. This bad condition may last after childhood.** | 2. The infected person cannot read ordinary writing in normal distance. Because this person can see distant object clearly but cannot see the close objects. |
| **3. Myopia happens as a result of increasing the convexity of lens or the convexity of cornea or the length of eyeball. So the image forms in front the retina and the far objects cannot be seen well.** | 3. This disease occurs as a result of the convexity of cornea and lens or the length of eyeball. So the image is focused behind the retina. |
| **4. Myopia is treated by wearing concave lens used for dispersing the light rays. These lenses may be in the form of the glasses or contact lenses.** | 4. Hypermetropia can be corrected by wearing convex lens. These lenses may be in the form of the glasses or contact lenses. |

## 4-What is the cause of Pyogenic inflammations?

It is the inflammation of conjunctiva. Some pathological microbes cause this disease. There are two infection ways: Directly and Indirectly

1. Microbes of this disease are directly transmitted from hands to the eye by touching the contaminated equipment.

2. Microbes of this disease are indirectly transmitted to the eyes by flies carrying the microbes. These microbes are transmitted from infected eyes to uninfected eyes.

This disease may be transmitted to the newborn babies while the infant passes through the genital passage of mother during the birth.

## 5-Explain the visual process.

The light rays are collected by cornea and focused on the retina by lens. Then, the photoreceptors diffused on the retina are stimulated by light rays and send this stimulus (visible image) to the vision center in the brain. This image is interpreted in the brain in the form of colored photo with its normal dimensions. These all operations are called as visual process.

6-Write the physiological (functional) eye diseases by mentioning the treatment ways.

1. **Myopia:** It can be treated by concave lens
2. **Hypermetropia:** It can be treated by convex lens
3. **Astigmatism:** It can be treated by special lenses.

7-Explain the hearing operation in human.

- The outer ear collects the sound waves and transports to eardrum (middle ear) by auditory canal.
- The sound waves vibrate the eardrum and move the bones of middle ear (hammer, anvil and stirrup).
- Then, this vibration passes into the oval window; when it is vibrated, it vibrates the perilymph and endolymph.
- After that, the sound reaches the receptor organ.
- Receptor organ take these nerve impulses and send to the hearing center in the cerebrum by the auditory nerve.
- Then later these impulses are converted to sensation like the original sound so we hear.

8-What are the ear parts and which part is specialized with balance?

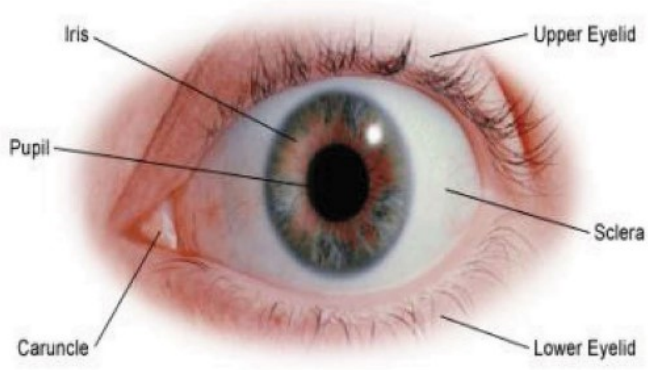
1-Outer ear 2-Middle ear 3-Inner ear 4. Semicircular Canals

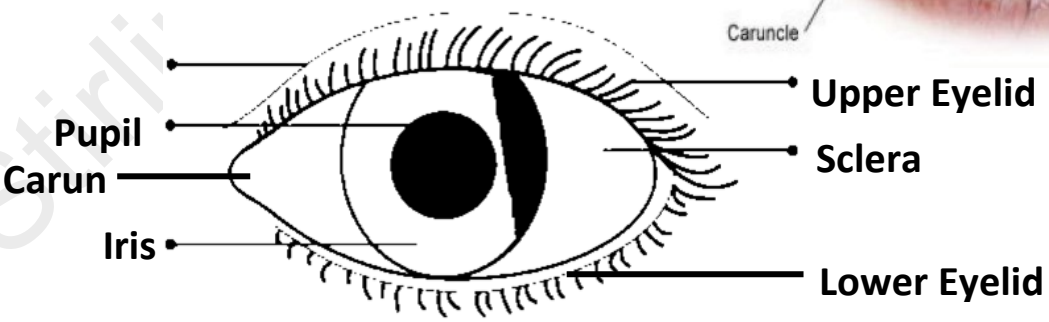
9-What are the general directions for maintaining the sense of hearing?

Pinna-Auditory Canal-Eardrum-Hammer-Anvil-Stirrup-Oval Window-Receptor organ

## Q6-Draw the followings and write the names of the parts.

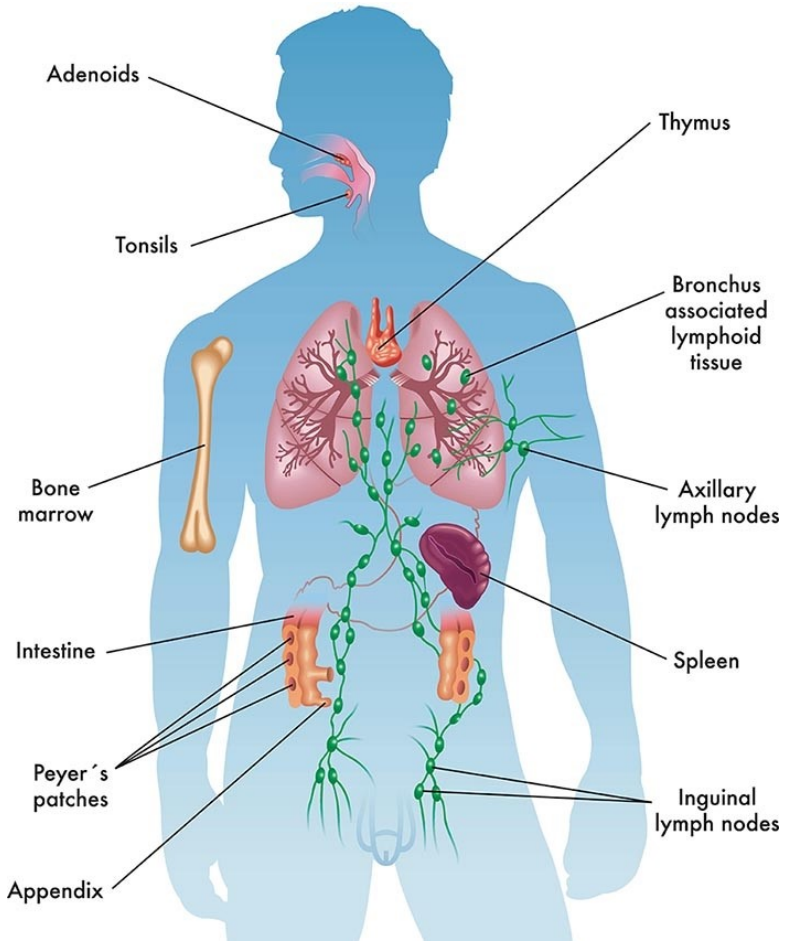
1-External structure of eye.



# Chapter { 10 }

# Secretion Question Banks



Chapter 10

# SECRETION

## Q1-Define the followings.

- **Endocrine Glands:** They are glands without ducts and they discharge their secretions into the blood capillaries.

- **Exocrine Glands:** They are glands which discharge their secretions into the ducts not into the blood or lymph.

- **Mixed Glands:** They are glands that secrete two types of secretions; internal and external such as pancreas gland. They discharge their secretions both into the blood and ducts.

- **Thyroid Stimulating Hormone (TSH):** they are hormones secreted by anterior lob of pituitary gland This hormone stimulates and regulates the thyroid gland secretions.

## Q2-Complete the followings.

1. The hormone which is secreted by the thyroid gland is called thyroxin hormone.
2. Pituitary gland is located under the brain.
3. The thyroid gland is located in front of neck below the pharynx directly.
4. The adrenal gland is located at top of kidneys while the thyroid gland is located in the front of the neck below the pharynx directly.
5. The antidiuretic hormone is secreted by the posterior lob of pituitary gland.

## Q3-Give an example for each of the followings.

- **Mixed gland:** Pancreas, testis, ovary, liver.
- **Exocrine gland:** Salivary glands, tear gland and gastric gland.

| Q4- Write the places (locations) of the followings. | |
|---|---|
| **Pituitary gland** | It is located under the brain. |
| **Thyroid gland** | It is located in the front of the neck below the pharynx directly. |
| **Adrenal gland** | It is located at the top of kidneys. |

| Q5- Write the functions of the followings. | |
|---|---|
| **Thyroxin** | This hormone regulates the rate of food metabolism in the body, so it affects the general growth.<br>Also it affects the specialization and formation of the organs in the body. |
| **Ovary** | Ovary is responsible for producing egg and hormones which are responsible for secondary sexual characteristics in female. |
| | |

## Q6- Answer the followings.

**1- Write the hormones secreted by the anterior lobe of pituitary gland.**

**Or Write the most important hormones secreted by frontal lobe of Pituitary gland and write the importance of each of them.**

a) **Growth Hormone:** It stimulates the body to grow.
b) **Thyroid Stimulating Hormone:** It stimulates and regulates the thyroid gland secretions.
c) **Adrenocorticotropic Hormone:** It controls the growth of the adrenal cortex (adrenal gland) and regulates the secretion of hormones from this region.
d) **Prolactin Hormone:** It stimulates the breast to secrete the milk in the female.

**2- Classify the glands according to the secretion method and write the functions of anterior lobe of pituitary gland.**

- **Exocrine glands:** Salivary gland, Gastric gland
- **Endocrine gland:** Thyroid gland, Adrenal gland, and Pituitary gland
- **Mixed gland:** Pancreas, Ovary and Liver

**Function of The anterior lobe of pituitary gland:**

**Answer:** secretes the Growth Hormone, Thyroid Stimulating Hormone, Adrenocorticotropic Hormone and Prolactin Hormone.

**3-Classify the following glands according to secretion method.**

- **Ovary:** Mixed gland
- **Liver:** Mixed gland
- **Salivary gland:** Exocrine glands
- **Gastric gland:** Exocrine glands
- **Adrenal gland:** Endocrine gland

**4-Write the important hormones secreted by the cortex of adrenal gland and write the importance of each of them.**

- ✓ **Mineralized hormones:** These hormones control the water and salt balance in the body.
- ✓ **Sugary hormones:** These hormones control the food metabolism in the body.
- ✓ **Sexual hormones:** These hormones control the appearance of sexual characteristics in the body.

**5-What are the differences between excretion and secretion?**

- **Secretion**
  1. Secretion is the formation of useful materials for the living things to perform their biological activities
  2. such as hormone, gastric juice and mucus materials . . . etc.
  3. Secretion materials are liquid.
  4. Secretion is performed by special structures called glands.
- **Excretion**
  1. Excretion is the accumulation and discharging of harmful materials from the body such as carbon dioxide and feces.
  2. Excretion materials can be solid (feces), liquid (urine or sweat), and gas (carbon dioxide).
  3. Excretion is performed by special glands and organs such as sweat glands, digestive system organs which
     discharge feces or respiratory system organs that discharge carbon dioxide.

**6-Write the causes of secretion of too much thyroxin in the body.**

**Answer:** The secretion of too much thyroxin in the body can be resulted from increasing the size of thyroid gland or
increasing the thyroid gland activity.

**7-Write the factors that cause the thyroxin hormone deficiency and secretion of too much thyroxin**
**hormone in thyroid gland.**

- **Factors that cause the thyroxin deficiency are;**
  1. Thyroid gland dystrophia.
  2. If the activity of thyroid gland decreases as a result of iodine deficiency in the body, the size of thyroid
     gland increases to replace the hormone deficiency.
- **Factors that cause the secretion of too much thyroxin are;**
  1. Increasing the size of thyroid gland.
  2. Increasing the thyroid gland activity.

**8-What are islets of Langerhans? What is the location of it? What is the importance of it for the body?**

The pancreatic islets or islets of Langerhans are the regions of the pancreas that contain its endocrine (hormone producing) cells. Pancreatic islets contain several types of cells, including beta cells, that produce the hormone
insulin.

## Q7- Correct the mistake if present in the following statements.

1. Some glands secrete useful materials and other glands secrete harmful material. **True**
2. The hormones are secreted by endocrine and mixed glands. **True**
3. The hormones are accumulated in cavities inside the cortex of adrenal glands. **False**
4. If a disorder is happened in the secretion of growth hormone in the youngster, its effect is different according to the other people. **True**

# Chapter { 11 }

# Immunity System Question Banks

Chapter 11

# IMMUNITY

## Q1-Define the followings.

- **Vaccines:** The vaccines are prepared from death or weak pathological microbes or their toxins. They are manufactured by special technical methods and then stored under the low temperature; it is injected to the body when it is needed such as triple vaccine which is injected in many doses to gain the active immunity, infantile paralysis vaccine, tuberculosis vaccine, measles vaccine and mumps vaccine.

- **Artificial immunity:** It is an immunity which is gained by vaccines and serum artificially. There are two types of artificial immunity; positive immunity and negative immunity.

- **Acquired immunity:** It is an immunity which is gained by pathological microbes entering the body. When the microbes enter the body, the body produces antibodies against these microbes. Sometimes, when the microbes enter the human body, the amount of microbes may be insufficient to cause the disease. So the body produces antibodies against these microbes. After a short time, the human body gains the immunity against this disease for a long period or short period such as small pox.

- **Inherited Immunity:** It is an immunity which is transmitted from parents to the individuals inherited by genes. So some individuals gain inherited immunity against some diseases according to the other people.

- **Congenital immunity:** It is an immunity which is gained by mother's blood during the fetal growth or mother's milk during the breast-feeding. After the birth, the infants gain immunity against some diseases such as some contagious diseases like measles, smallpox, infantile paralysis and other diseases. This immunity disappears gradually after a few months.

- **Serum:** It is a liquid material prepared from human blood plasma which is previously infected with a certain disease or it is prepared from the blood of some animals such as horses and cows.

## Q2-Complete the followings.

1. Triple vaccine contains the anti-bodies against the tetanus , diphtheria and whooping cough diseases.
2. The vaccine against tuberculosis disease is called B.C.G.
3. The vaccine against meningoencephalitis is given during the outbreak of this disease.
4. The immunity is divided into two main groups which are natural and artificial.

## Q3-Answer the followings.

### 1-What is the triple vaccine? Explain briefly.

Triple vaccine is a vaccine which provides immunity against tetanus, diphtheria and whooping cough. This vaccine is given to the infants in three doses once a month for three months. The first dose is given to the infant during the
third month of the infant's age. The strengthening dose is given at end of first year of infant's life and then the second strengthening dose is given at the entrance of pre-primary school. This vaccine protects the body against the tetanus, whooping cough and diphtheria.

### 2-Define the natural immunity and write the types of it.

It is an immunity which is formed in the body naturally. The body gains natural immunity by itself. There are four types of natural immunity;
1. Specific immunity 2. Inherited Immunity 3. Congenital immunity 4. Acquired immunity

### 3-What are the differences between the serum and vaccine?

| *Serum* | *Vaccine* |
|---|---|
| 1-it is prepared from blood plasma of human, horse and cow. | 1-it is prepared from weak or dead pathological microbes or their toxins. |
| 2-it includes antibodies against a certain disease and it is used for protecting from a certain disease. It provides The necessary immunity against diseases after the illness. | 2-it provides the active immunity against diseases and it includes weak or dead pathological microbes or their Toxins. |
| 3-it is given to ill person. | 3-it is given to healthy person. |