

## LESSON NO 3

### THE SKELETAL AND MUSCULAR SYSTEM

#### NEW WORDS

1. Skeleton
2. Collapse
3. Bone marrow
4. Vertebrae
5. Vertebral column
6. Spinal cord
7. Femur
8. Ribs
9. Breast bone
10. Sternum
11. Humerus
12. Hinge
13. Ligament
14. Ball and socket
15. Gliding
16. Triceps
17. Voluntary
18. Cardiac
19. Pivot
20. Striated
21. Striped
22. Cranium

#### ANSWER THE FOLLOWING QUESTIONS.

**Q1. Write the functions of the skeletal system.**

Ans. Our skeletal system

1. Gives shape and support to our body.
2. Protects soft internal organs like brain, heart, lungs.
3. Bones have bone marrow where the blood cells are produced.
4. The muscles attach to bones help in movement of various body part.

**Q2. Answer the following in one or two words.**

1. Number of bones in
  - Skull- 22
  - Upper part of skull- 8

- Our face- 14
  - In backbone (vertebrae) – 33
  - Pair of ribs- 12 pair
2. Organs protected by
    - Skull- brain
    - Rib cage- heart, lungs
    - Backbone- spinal cord
  3. The other name of the backbone- spine or vertebral column
  4. Thin, flat, curved bones that form a cage around the heart and lungs- ribs
  5. The other name of the breast bone- sternum
  6. Pair of ribs that are not attached to sternum- floating bones/ ribs.

### Q3. Name the following.

1. Bone present at the upper half of the leg- femur
2. The longest bone in our body- femur
3. Bone present at the lower half of the leg-
  - shin bone- tibia
  - calf bone- fibula
4. Bone present at the upper arm- humerus
5. The stretchy bands that hold the bones at joints- ligament
6. The tough band of tissues that attach muscles to bones- tendons.
7. The round part of the skull that holds the brain- cranium
8. The last two pairs of ribs that are not attached to sternum- floating ribs
9. Muscles present only in heart- cardiac muscles
10. Muscles present in stomach, intestine etc- smooth muscle
11. The other name of voluntary muscles- striated muscle
12. The other name of involuntary muscles- non- striated muscle

### Q4. Define joints. Name the four types of joints and give two examples of each.

Ans. Joints are place where two or more bones are joined together.

The four types of joints are

1. Ball and socket joint- eg. hip joint, shoulder joint
2. Hinge joint- eg. Knee joint, elbow joint
3. Pivot joint- joint between the first two vertebrae of the backbone.
4. Gliding/ sliding joint- eg wrist and ankle joints.

### Q5. Write the difference between voluntary and involuntary muscles. Give one example of each.

Ans.

Voluntary Muscles	Involuntary Muscles
These muscles are in our control.	These muscles are not in our control.
Eg. Muscles in arms and legs.	Eg. Muscles in heart and stomach

**Q6. Describe the movement of different types of joints.**

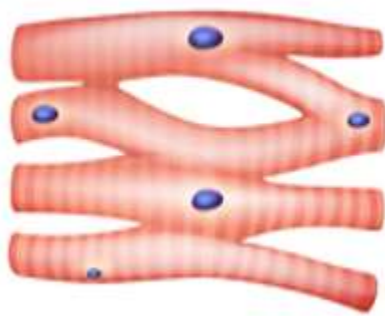
Ans.

1. Pivot joint: helps in movement of our head in upward, downward and sideways direction.
2. Gliding/ sliding joint: allow small sliding movements at wrist, ankle and vertebrae. It allows back to bend, twist and turn.
3. Ball and socket joint- it allows circular movement.
4. Hinge joint- it allows movement of bones only in one direction.

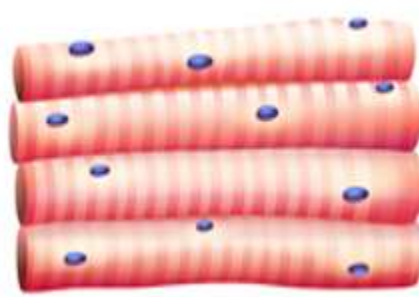
**Q7. Draw the diagram of skeletal, cardiac and smooth muscles.**

Ans.

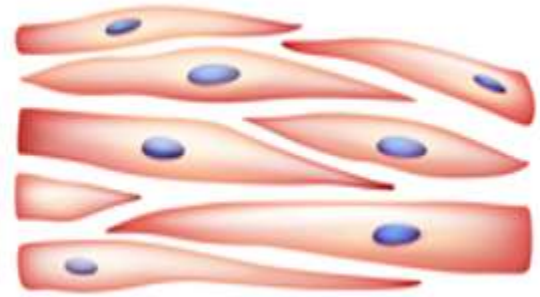
**Types of Muscle**



**Cardiac muscle**



**Skeletal muscle**



**Smooth muscle**

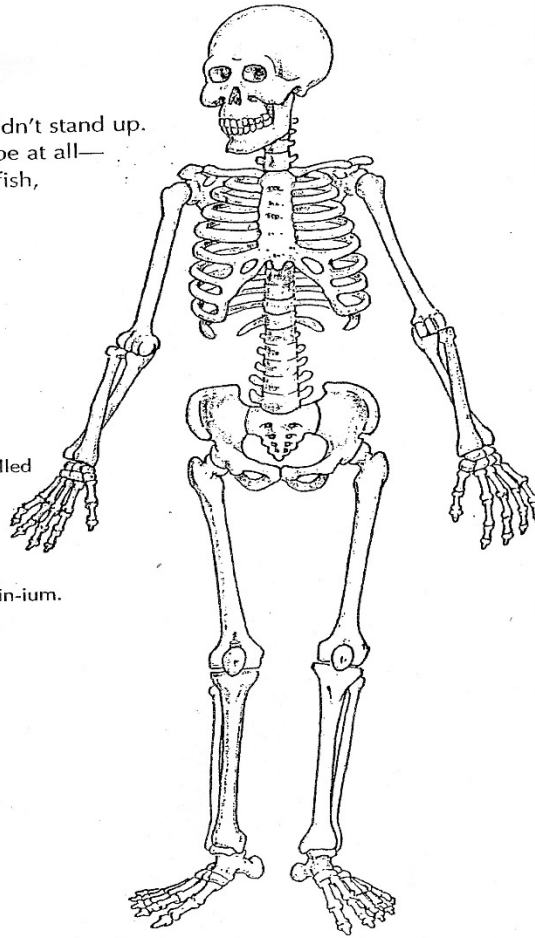
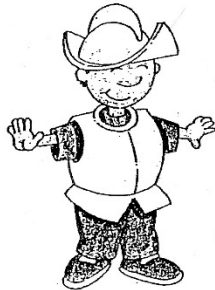
## CBE BASED QUESTIONS

### **Bones**

Without your bones, you couldn't stand up.  
You wouldn't have much shape at all—  
Like a lump of clay, or a jellyfish,  
Or a punctured rubber ball.  
Yes, to give you shape  
And support your weight,  
Bones are absolutely great.  
Long bones, short bones,  
Big bones, small—  
You have 206 in all!

All the bones in your body are called  
your *skeleton*.

Ribs are like a vest  
You wear around your chest  
To protect your lungs and heart.  
Your cranium surrounds your brain-ium.  
Bones guard your softer parts.



**Read the above poem and tick the correct option.**

1. Which of the following is not the function of skeletal system?
  - a) Give support to our body.
  - b) Give colour to our body.
  - c) Give shape to our body.
  - d) Protect internal soft organs.
2. What would have happened if you had no bones?
  - a) I would have been like a horse.
  - b) I would have been like a tree.
  - c) I would have been like a punctured ball.
  - d) I would have been like a scare crow.
3. Which part of your body is protected by ribs?
  - a) Brain
  - b) Stomach
  - c) Small intestine
  - d) Heart

4. If you have fracture in the longest bone of your body, then you have problem in which part of your body?
- a) Upper hand
  - b) Back bone
  - c) Thigh bone
  - d) Lower leg
5. Gunjan fell from stairs. She injured her right knee. In X ray report, her bones were perfectly fine. Damage could be in
- a) Ligament
  - b) Bone marrow
  - c) Tendon
  - d) Both a and c

**LESSON NO 1**  
**MORE ABOUT PLANTS**

**NEW WORDS**

1. Reproduction
2. Damage
3. Cotyledon
4. Dicotyledonous
5. Dicot
6. Monocotyledonous
7. Monocot
8. Embryo
9. Germination
10. Condition
11. Hypocotyl
12. Radicle
13. Epicotyl
14. Seedling
15. Plumule
16. Dispersal
17. Struggle
18. Explosion
19. Spores
20. Agriculture
21. Rabi crop
22. Legumes
23. Kharif crops
24. Ploughing
25. Enrichment
26. Manure
27. Fertiliser
28. Sowing
29. Irrigation
30. Pesticides
31. Harvest
32. Perishable
33. Contour

**ANSWER THE FOLLOWING QUESTIONS**

Q1. What is germination?

Ans. Germination is a process by which a seed produces a baby plant or seedling in the presence of air, water and warmth.

Q2. Define agriculture.

Ans. Agriculture is the practice of growing plants on a large scale for food or other purposes.

Q3. Name the essential elements, other than soil for the growth of a seed.

Ans. Air, water and warmth

Q4. Which special feature of a potato helps in growing its new plant?

Ans. The small buds present on the potato help in growing its new plants.

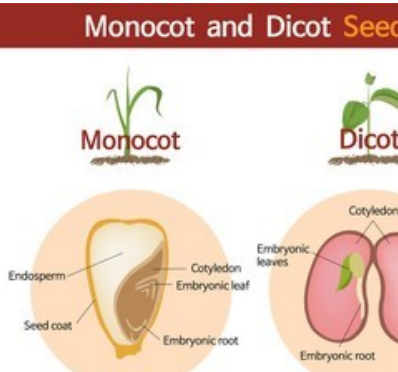
Q5. What is contour farming? Where and why, it is done?

Ans. In hilly areas, people do not have enough space to grow crops. So, they cut steep slopes into several steps and create flat surface for growing crops. This type of farming is called contour farming.

Q6. Explain the structure of a seed with the help of a diagram.

Ans. A seed has the following parts:

- Seed coat: it protects the seed from being damaged.
- Cotyledons (seed leaves): they store food for the baby plant.
- Embryo: it is the baby plant inside the seed. It has a root and a shoot.



Q7. Define crops. Name the main types of crops grown in India.

Ans. Large quantities of fruits, vegetables, cereals and pulses grown in a season in a particular place by a farmer are called crops.

- The two main types of crops grown in India are kharif and rabi crops.

Q8. Define harvesting and irrigation.

Ans. Harvesting is the cutting and gathering of crops when they are ripe and ready.

- Irrigation is the supply of water to the fields through pipes and channels so that crops get sufficient water for growth.

Q9. Differentiate between monocot and dicot seeds.

Ans.

Monocot seeds	Dicot seeds
These seeds have only one cotyledon.	These seeds have two cotyledons.
Eg maize, rice, wheat	Eg pea , kidney beans

Q10. Define seed dispersal. Describe the different ways of seed dispersal.

Ans. Seed dispersal is the process of scattering of seeds away from the mother plant.

✚ Different ways of seed dispersal are

i) Dispersal by wind

- Seeds which are light in weight or have hair or wings fly away and scatter with the wind.
- Eg dandelion seed and drumstick seeds

ii) Dispersal by water

- Seeds or fruits that grow in or near flowing water has a fibrous covering or they are spongy. Such seeds get dispersed by water.
- Eg. Lotus, coconut

iii) Dispersal by animals

- Seeds that have spikes or hooks or stiff hairs are dispersed by animals. Eg cocklebur
- Human beings eat fruits and throw away the seeds on the ground. Eg mango, jamun.
- Sometimes, birds and animals eat the fruits with the seeds which later come out with their droppings. Eg fig, banyan fruit

iv) Dispersal by explosion

- Fruits of some plants explode on ripening and shoot out the seeds.
- Eg pea and poppy seeds

Q11. Write the stages of agriculture.

Ans. i) ploughing ii) enrichment of soil iii) sowing seeds iv) irrigation v) spraying insecticides and pesticides vi) harvest and storage vii) transportation

Q12. Explain the process of germination with the help of a diagram.

Ans. i) The seed gets air, water and warmth.

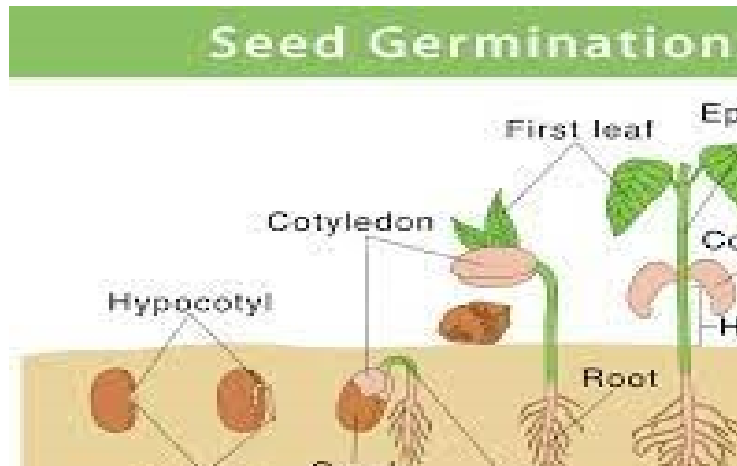
ii) The seed soaks up water, the seed coat breaks and the root emerges.

iii) The new plant develops roots and a shoot.

iv) As the plant grows in size, it develops leaves.

v) The cotyledons shrink and disappear.





Q13. Give two examples of the following.

- i) Growing plants from stem: hibiscus, sugarcane  
Underground stem: potato, onion, ginger
- ii) Growing plants from roots: sweet potato, carrot, turnip
- iii) Growing plants from leaves: bryophyllum, begonia
- iv) Growing plants from spores: mushroom, ferns

Q14. Give reason.

- i) Tea cannot be planted in plains.

Ans. Tea needs humidity and rain for its proper growth. This is why tea cannot be planted in plains.

- ii) Soil is ploughed before sowing seeds.

Ans. Soil is ploughed before sowing seeds to loosen the soil so that sufficient air gets into it and stones and pebbles are properly removed.

### CBE BASED QUESTIONS

1 Why do we see coconut trees mostly near a water body?

- a) Because coconut needs water to grow.
- b) Because beaches look beautiful.
- c) **Because coconut seeds get dispersed by water.**
- d) Because coconut need sand to grow.

2. Which of these are required for germination?

- a) air b) water c) warmth d) **all of these**

3. Tick the correct option.

- a) dandelion- water
- b) lotus- wind
- c) **drumstick- wind**
- d) banyan- explosion

4. The part that grows below the ground is called

a) plumule b) radicle c) hypocotyl d) epicotyl

5. If you are a farmer, which crop will you grow in June to October month?

a) rice b) wheat c) legume d) cotton

## LESSON NO 2 ANIMALS AND THEIR ADAPTATIONS

### NEW WORDS

1. Vertebrates
2. Invertebrates
3. Locomotion
4. Exoskeleton
5. Flapping
6. Reptiles
7. Ventral
8. Hindlimb
9. Forelimb
10. Hooves
11. Surefooted
12. Spiracles
13. Trachea
14. Nares
15. Blowhole
16. Quills
17. Camouflage

### ANSWER THE FOLLOWING QUESTIONS

Q1. Name any three animals that have webbed feet.

Ans. Duck, turtle, crocodile

Q2. How do insects breathe?

Ans. Most insects breathe through spiracles.

Q3. Name any three animals that use lungs to breathe.

Ans. Dog, cat, humans

Q4. Name any four organs of movement in animals.

Ans. Fins, legs, scales, wings

Q5. Why is the body of fish streamlined?

Ans. The body of fish is streamlined to help it swim easily.

Q6. Explain movements in different types of birds.

Ans.1) Birds that can fly have well developed wings, feathers and strong flight muscles.

- Their body is light weight because of hollow bones.
- These birds can fly by flapping their wings.

2) Aquatic birds like ducks have webbed feet to swim in water.

3) Penguin cannot fly due to very heavy body, but can swim very fast.

4) Ostrich can run very fast using its hind limbs.

Q7. Explain the body covering in various animals.

Ans.

- i) Feathers- birds have feathers which keep them warm and help them fly.
- ii) Scales- fish have overlapping scales to stop water from entering the body.
  - Reptiles like snakes and lizards have scales for protection.
- iii) Shell- oysters, tortoises and snails have a shell to protect their soft bodies.
- iv) Fur and wool- sheep have wool and polar bear and Arctic fox have fur to keep their bodies warm.

Q8. What is camouflaging? Give examples.

Ans. Camouflage is a process of blending with surrounding so that they cannot be spotted.

Eg: Tigers have stripes on the body to blend with forest background.

Q9. How do the following animals protect themselves?

Ans.

- i) Porcupines: have needle like quills for protection.
- ii) Armadillos: have hard armour like plates for protection.

Q10. Describe how different vertebrates breathe.

Ans.

- i) Fish and baby amphibians breathe through gills.
- ii) Adult amphibians- lungs and skin
- iii) Reptiles, birds and mammals- lungs
  - Birds have small holes known as nares on both the sides of their beaks to inhale air.
  - Whale and dolphins have blowhole for breathing.

Q11. What is migration? Give examples.

Ans. The seasonal movement of the birds and the animals from one place to another in search of food and to avoid harsh seasonal changes is called migration.

Eg.

- i) Dragonflies migrate to southern part of Asia during winter season.

- ii) Monarch butterflies migrate from North America to southern part of California to spend winter season.

### **CBE BASED QUESTIONS**

1. Identify the animal: It has strong grinding teeth to chew the flesh and crush bones.  
a) Deer   **b) lion**   c) elephant   d) buffalo
  
2. This is the only bird that has nares at the tip of its beak.  
a) **Kiwi**   b) ostrich   c) peacock   d) duck
  
3. Choose the correct option.  
a) **Birds: lungs**  
b) Insects: lungs  
c) Humans: nare  
d) Fish: skin
  
4. Salmon fish migrate from saltwater to freshwater because  
a) Their friends live in freshwater.  
b) To protect themselves from saltwater.  
c) **To lay eggs.**  
d) They love freshwater.
  
5. If frog: lungs, then tadpole: \_\_\_\_\_  
a) **Gills**  
b) Trachea  
c) Spiracle  
d) skin