

Unit - 4
For Obtaining Energy

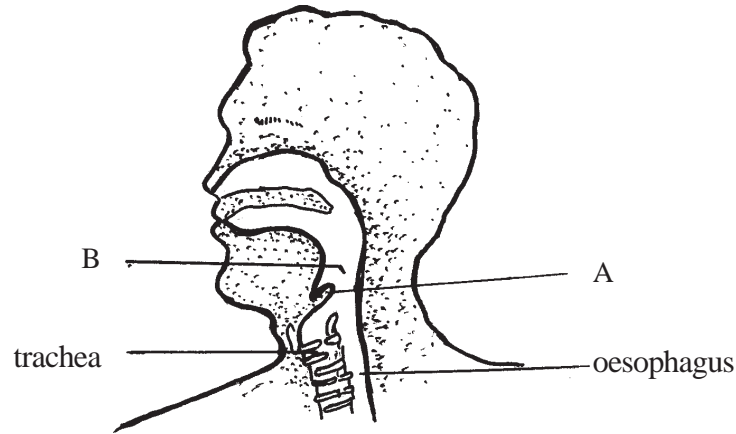
PART - A

1. Identify the word pair relation and fill in the blanks
 - a) Cartilages in the trachea : helps to keep the trachea open
.....:increases the surface area of lungs
 - b) Heart : pericardium ::lungs:.....
 - c)Leaf: stomata :: mature stem :.....

Time - 5 min
Score - 1 for each

PART - B

2. Observe the picture and answer the following questions



- a) Name the parts labelled A and B in the picture.
- b) What happens when part A does not work?

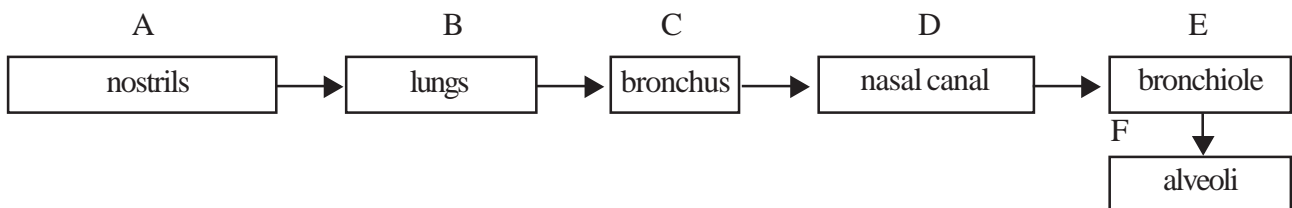
Time - 4 min
Score - 2

3. Arrange the following statements under the headings Glycolysis and Krebs's cycle

- 1) oxygen is not needed
- 2) takes place in mitochondria
- 3) 4 ATP energy is released
- 4) 28 ATP energy is released

Time - 4 min
Score - 2

4. Illustrated below is the flow of air to the lungs. Examine it and correct the mistakes, if any.



Time - 3 min
Score - 2

5. Using the indications of respiratory organs given below choose the organisms that possess it. Name their respiratory organs too.

a) seen as a partially open book

b) opens to the outside through openings called spiracle

c) can respire through other organs besides lungs

scorpion,
earthworm, cockroach, frog,
amoeba, fish

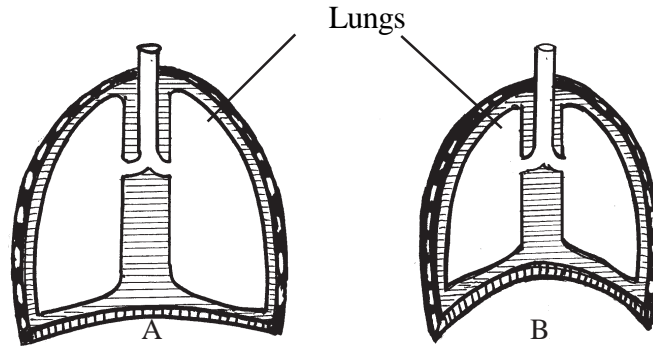
Time - 4 min

Score - 3

PART - C

6. A person having a hole in the thoracic wall after an accident, found it difficult to breathe. What may be the reasons?

Time - 4 min
Score - 2



7. Observe the picture.

- a) Which stages of respiration are indicated by figures A and B?
- b) In which direction does air flow in stage A and stage B?
- c) What is the role of the diaphragm in the flow of air?

Time - 6 min
Score - 4

8. The different stages of an experiment related to the process of respiration done by Syam is given below. Examine it and help Syam complete the record.

- lime water is taken in two test tubes.
- air is passed into the solution in the first test tube using a syringe.
- air is blown strongly into the second test tube.

A Observation

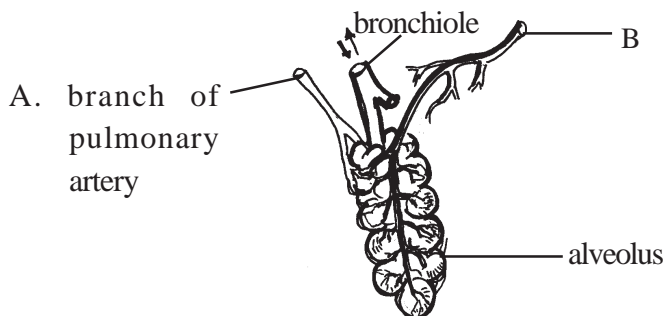
.....

B Inference

.....

Time - 5 min
Score - 4

9. Observe the picture and answer the following questions



a. Name the part labelled B in the picture

b. What is the amount of oxygen in the blood in vessels A and B?

Time - 5 min

Score - 3

10. $\text{Haemoglobin} + \text{oxygen} \longrightarrow \text{HbO}_2$

a) Which compound is indicated by HbO_2 in the above equation?

b) What is the characteristic property of this compound?

c) How does this property help in the process of gas exchange?

Time - 5 min

Score - 3

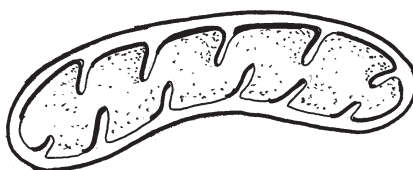
11. Arrange columns B and C in accordance with column A:

A	B	C
<ul style="list-style-type: none"> • Haemoglobin • Water in the RBC • Glycolysis 	<ul style="list-style-type: none"> • CO_2 • takes place in the cytoplasm • oxygen • 30 ATP 	<ul style="list-style-type: none"> • mitochondria • oxyhaemoglobin • bicarbonate • pyruvic acid

Time - 6 min

Score - 3

12. Redraw the given picture and label the parts that perform the function indicated



a. the part where the reactions of Krebs's cycle take place

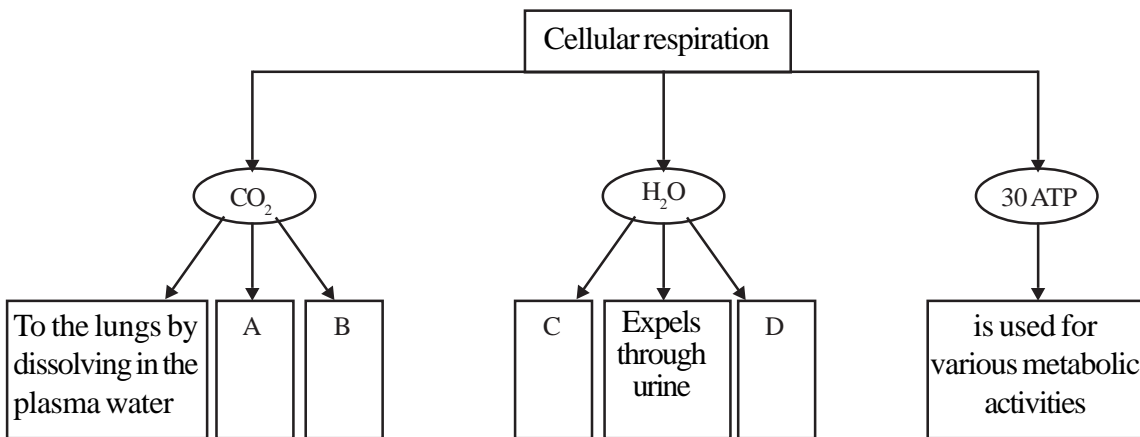
b. the part where ATP is produced finally

5

Time - 6 min

Score - 3

13. Complete the blocks in the illustration :



Time - 6 min
Score - 4

14. An extract from Aswathi's diary is given. Analyse it and answer the following questions

Buttermilk was added to boiled and then cooled milk. It turned into curd the next day. Buttermilk obtained when this curd was churned, tasted sour. It was inferred that this was because of the presence of lactic acid. Yeast was added to sugar solution taken in a vessel and closed. The presence of alcohol could be detected after two days....

- By which process are alcohol and lactic acid produced?
- Does this process resemble any process that takes place in our cells?
- Why do microbes perform such actions?
- What are the other products formed as a result of these processes?

Time - 8 min
Score - 4

15. There is a variation in the amount of components in the inhaled and exhaled air. A table regarding this is given below. Choose suitable terms from the box and complete the table.

Factors	inhaled air	exhaled air
oxygen		
carbondioxide
nitrogen

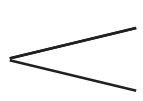
less
more
no change

Time - 4 min
Score - 3

Unit - 5 Movement and Locomotion

PART - A

1. Identify the wordpair relation and fill in the blanks :-

- a) gravity  stem : i)
 ii) : positive tropic movement

Score - 1
Time - 1 min

- b) climbers: haptotropism
 growth of pollen :: :

Score - 1
Time - 1 min

2. Identify the odd one and write the common feature of others

- a. cardiac muscle, muscle in the hand, muscle in the tongue
- b. muscles in the oesophagus, muscles in the finger, muscles in the urinary bladder, muscles in the blood vessel
- c. heart beat, movement of tongue, contraction of pupil, contraction of urinary bladder
- d. shoulder bone, backbone, chestbone, ribs
- e. shoulder joint, knee joint, elbow joint, joints of the skull
- f. bone in the trachea, ribs, bone at the tip of nose, bone in the pinna
- g. growth of roots towards manure pits, growth of roots towards water, growth of stem towards light, drooping of leaves of touch -me -not plants which touched.

Score - 1 for each
Time - 1 min

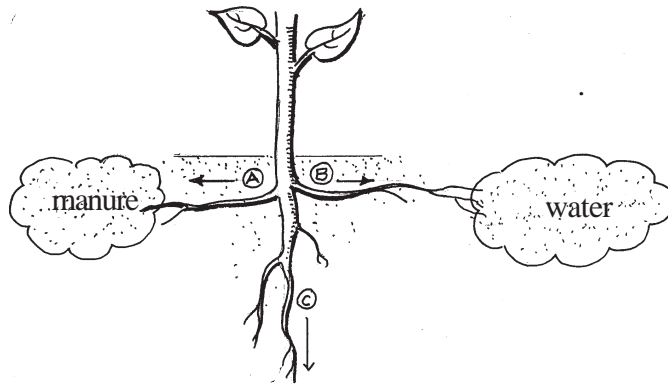
3. The bones of adults are stronger than those of children. Choose the most suitable statements given below regarding this:

- a. because the skeletal muscles in children are not fully developed
- b. because the inside of bones of children are empty
- c. because the deposit of calcium salts in between bone cells of adults is more
- d. because the bone cells of adults is dead

Score - 1
Time - 2 min

PART - B

4. Observe the illustration and answer the following questions



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If C indicates gravity in the picture, what do A and B indicate?

Time - 1 min

Score - 2

5. Complete the table

Organism	Body part	Use
Amoeba	pseudopodia	food capture A
Hydra	tentacle	food capture B
C	cilia	D

Time - 2 min

Score - 2

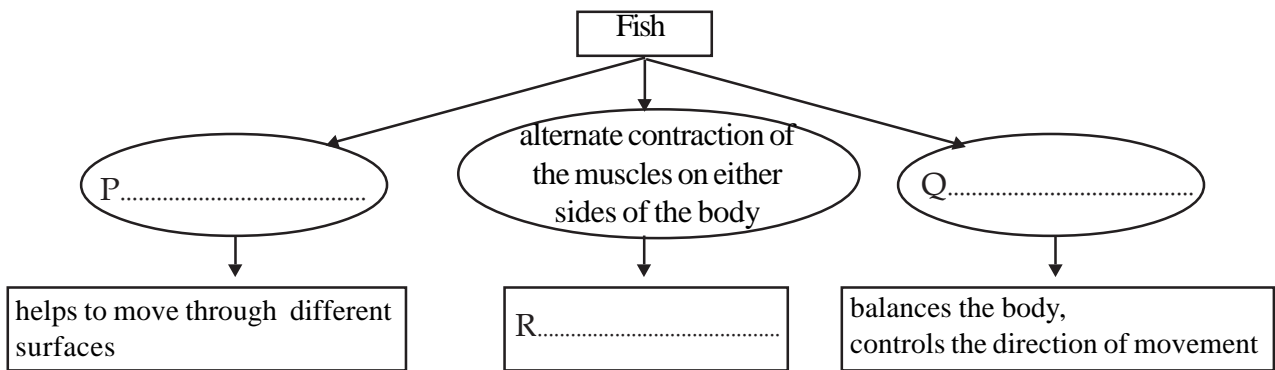
PART - C

6. Afsa wrote continuously for half an hour. Then she experienced fatigue in the wrist. After resting for sometime it became normal.

- a. Why does Afsa experience fatigue at her wrist?
- b. Why did it become normal after rest?

Time - 5 min
Score - 4

7. Complete the illustration



Time - 4 min
Score - 3

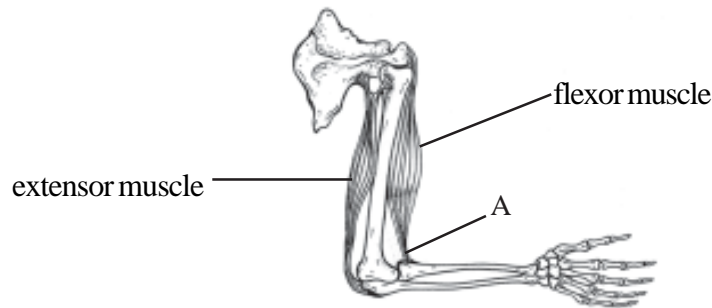
8. A few statements regarding the muscles in our body are given below. Identify the muscles and arrange them in the table. (A statement if applicable to more than one muscle may be written accordingly).

.....	cardiac muscle

- i. seen in oesophagus, blood vessels etc
- ii. branched muscle fibres
- iii. makes possible voluntary movements
- iv. muscle fibres are cylindrical
- v. involuntary muscles

Time - 4 min
Score - 4 **3**

9. Observe the picture and answer the following questions:



- By which name is the pair of muscles in the picture known?
- How do these muscles act when the hand is folded?
- Which part of the muscle is labelled A in the picture?

Time - 4 min
Score - 3

10. Redraw the picture and label the parts that perform the given functions :-



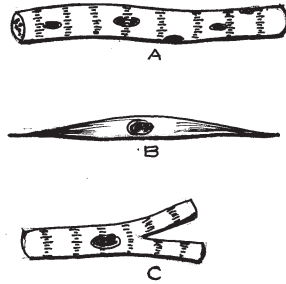
- Acts as a lubricant that reduces friction in the joints
- Protective covering of joints. The ligaments in it join the bones together
- This soft and flexible part helps to reduce friction

Time - 8 min
Score - 4

11. Movement is what is seen in plants. But in animals both movement and locomotion are seen. Substantiate to which extent this statement is true, with examples.

Time - 4 min
Score - 4

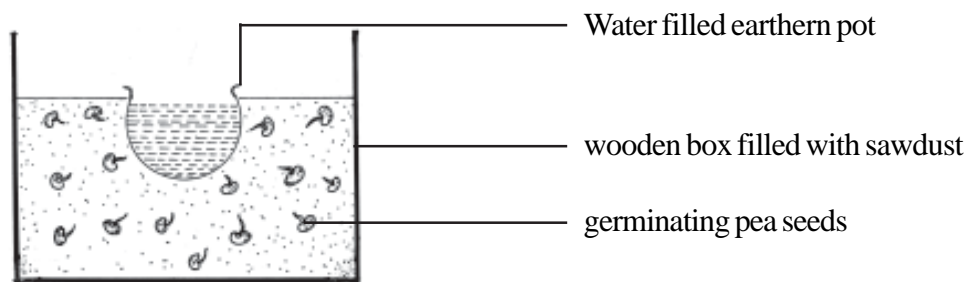
12. Observe the pictures and answer the questions



- Identify the muscle cells given above
- Which are the structural features that helped you to identify them?

Time - 5 min
Score - 3

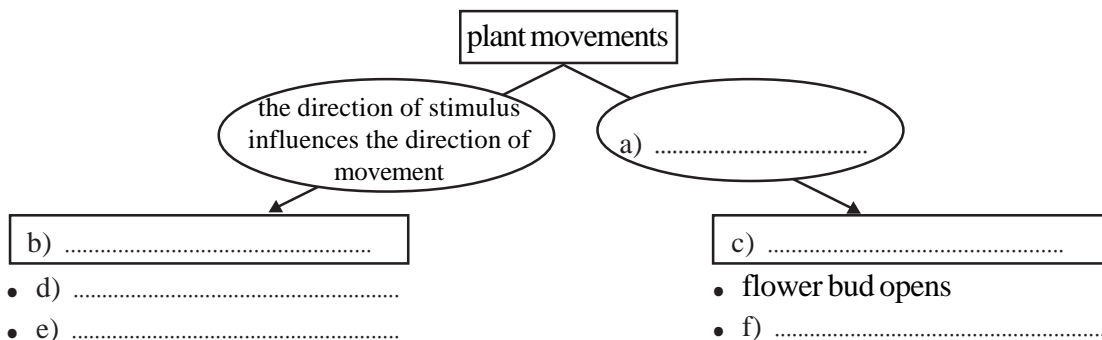
13. Given below is the arrangement of an experiment done by the members of the Science club.



- Which is the direction of growth of the roots of pea?
- Which is the factor that influences the direction of growth?
- By which name is the type of movement seen in roots known?

Time - 3 min

14. Complete the illustration given



Time - 4 min
Score - 3

15. Some bones in the human skeleton are given. Classify and arrange them in a table.

i. skull

ii. bones in the hand

iii. ribs

iv. backbone

v. thigh bone

vi. shoulder bone

Time - 5 min

Score - 4

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Unit - 6

The Mystery of Growth

PART - A

1. Choose the statements generally applicable to all plant cells from the following :
- Cell membrane invaginates to the middle and divides the cytoplasm into two during cell division.
 - The spindle fibres that originate from the poles of the cell other than the centriole are attached with centromere
 - cell plate is formed between daughter nuclei
 - no centromere

Time - 2 min

2. Identify the relation of the word pair and fill in the blanks

- dicot plants : lateral meristem
monocot plants :
- Apical meristem : increases the length of stem, root etc
..... : helps to increase the girth of stem
- Meristematic tissue : tissue having the ability to divide
..... : tissue that lost the ability to divide
- Chromatin reticulum : Chromosome
Centrioles :

Time - 1 min
Score - 1 for each

PART - B

3. Cell division is the basic process in growth organisms

- a. Is this statement applicable to all organisms ?
- b. Substantiate your answer with examples.

Time - 2 min

Score - 2

4. Choose the statements that are applicable only to the cells of apical meristem

- i. large vacuoles are seen
- ii. the amount of cytoplasm is more
- iii. thick cell wall
- iv. comparatively small cells

Time - 3 min

Score - 2

5. Is the difference in growth between a 25 year old coconut tree and a 50 year old coconut tree visible in human beings of the same age? What is your explanation to this?

Time - 3 min

Score - 2

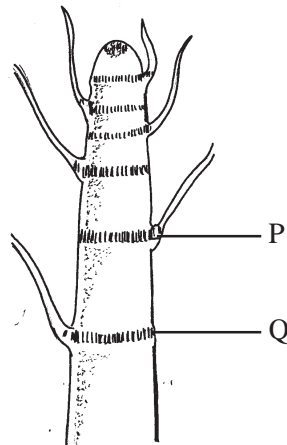
6. Prepare a model of a poster to be exhibited in the classroom in connection with the "International Day for the Elderly."

(suitable pictures and messages should be included in the poster)

Time - 5 min

Score - 2

7. Using the picture and indication answer the following questions



Indication

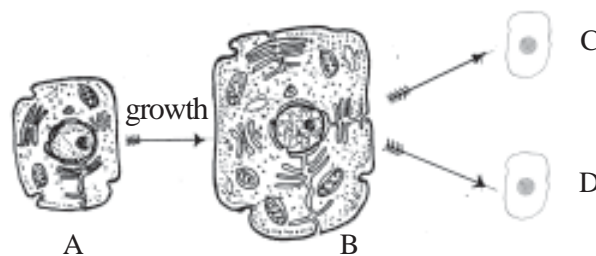
The distance between P and Q was 3 cm before three weeks. Now it has become 5 cms

- a. Which meristem helps to increase the length of the stem?
- b. In which group of plants is this meristem seen?

Time - 3 min
Score - 2

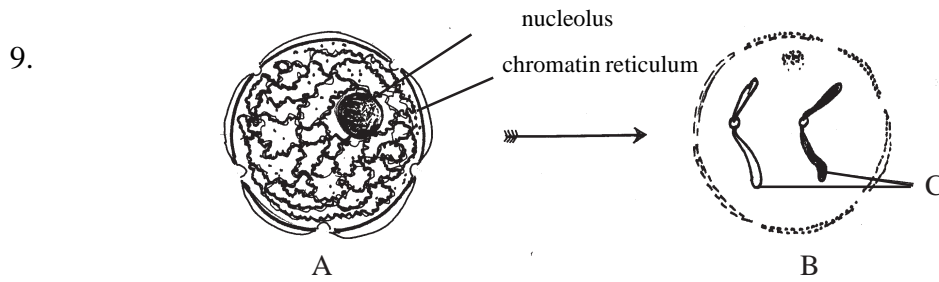
PART - C

8. Observe the illustration and answer the following questions



- a. What are the changes seen in the cell when it matures?
- b. By which process does cell B change to C and D?

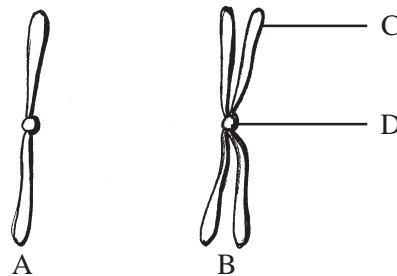
Time - 3 min **3**
Score - 3



- Name the part labelled A in the picture
- Which part in the picture A is converted to C?
- Name the molecule in C that carries hereditary factors.

Time - 4 min
Score - 3

10. The two stages of chromosomes before cell division are given below.



- Name parts C and D in the picture
- If there is one DNA molecule in the chromosome in A, how many DNA molecules will be there in picture B? What is your justification for this?

Time - 4 min
Score - 3

11. Correct if there is any mistake in the following statements :

- Chromatin reticulum changes to chromosomes before cell division
- There are many DNA molecules in each chromosome
- Many DNA molecules that carry hereditary factors constitute a gene.
- Chromosomes duplicate before cell division

Time - 4 min
Score - 3

12. The length and thickness of the stem goes on increasing till the end of their life in certain plants. Where as the length of the stem increases while the girth does not increase in some other plants.

- What is your explanation for this?
- Write two examples for each group of plants.

Unit - 7
The Continuity of Life

PART - A

1. Identify the odd one and write the characteristic feature of others :

- a. mango tree, jack tree, cashew tree, nutmeg
- b. Hen, duck, platypus, pigeon

Time - 2 min
Score 1 x 2 = 2

2. Identify the word pair and fill in the blanks :

- a. Nutmeg : dioecious plant
..... : monoecious plant
- b. melon : unisexual plant
..... : bisexual flower

Time - 2 min
Score 1 x 2 = 2

PART - B

3. The chromosome number in man and woman is the same in human beings. But in honey bees, males have 16 chromosomes and females have 32 chromosomes. What is your explanation for this?

Time - 4 min
Score - 2

4. Amal and Vimal are twins, who are very similar in appearance. Vishnu and Vinaya are also twins. But they resemble only like ordinary sisters.

What is the reason for this difference?

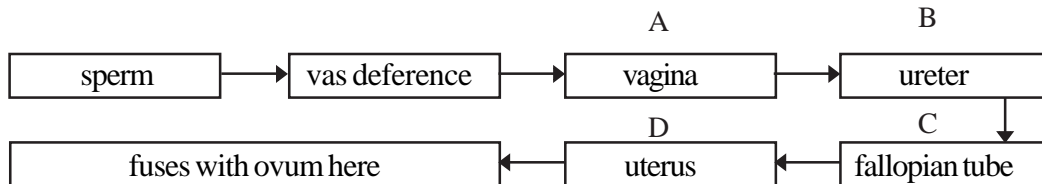
Time - 4 min
Score - 2

5. Gametes are produced as a result of meiosis that takes place in germinal cells. Do four ova develop from a single cell in the ovary as a result of meiosis?

Is this possible in human beings? Why?

Time - 6 min
Score - 4

6. Arrange boxes A to D in the illustration given below



Time - 3 min
Score - 2

7. Some indications regarding reproduction in plants are given.

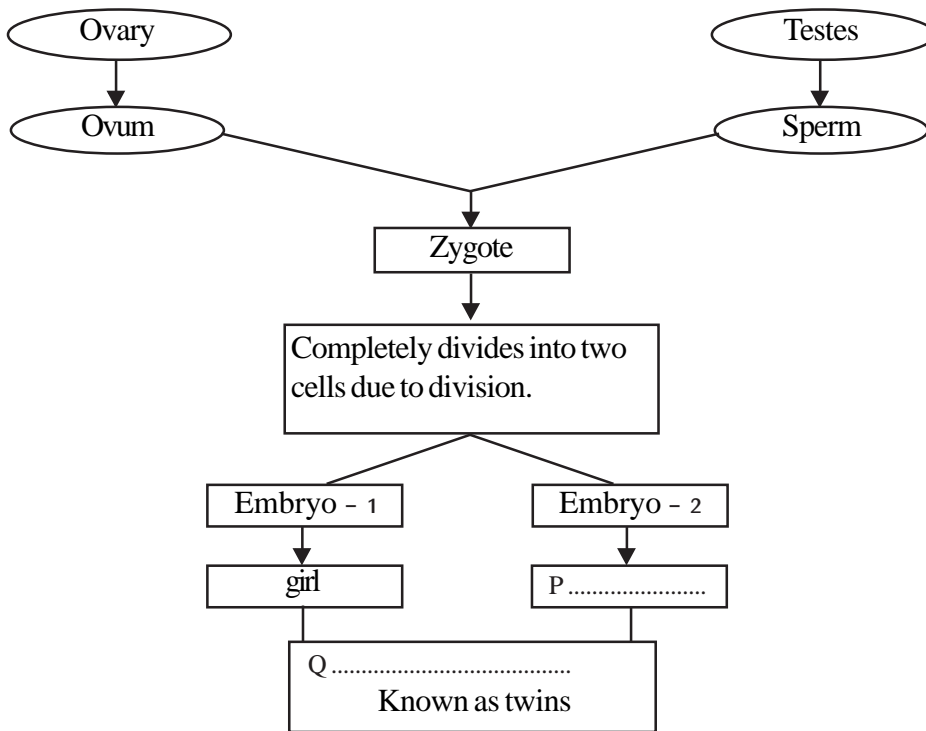
Tapioca	-	stem
Onion	-	underground stem

- a. By which name is this type of reproduction known?
b. How it differs from the reproduction in the mango tree?

Time - 3 min
Score - 2

PART - C

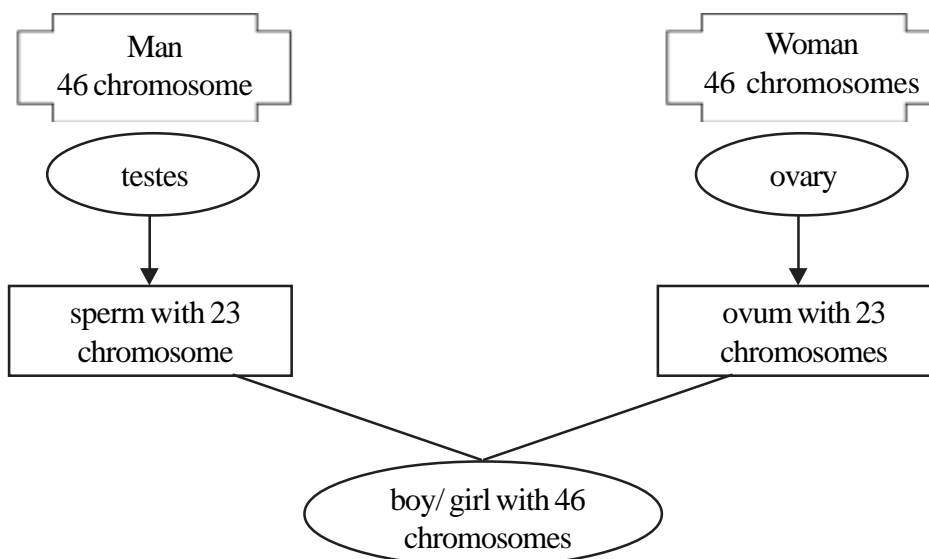
8. Observe the illustration .



- Fill in the blanks P and Q in the diagram
- What are the other characteristics of the twins in the diagram?
- What is the reason for these characteristics?

Time - 4 min
Score - 3

9.



The diagrammatic representation of sexual reproduction in human beings is shown above. Make necessary changes in the diagram and illustrate the production of male and female offsprings in honey bee.

3

Time - 6 min
Score - 4

10. Read the news report and prepare a note based on the indications given

Twins separated through surgery

Thiruvananthapuram: A team of doctors of the Govt: Medical College through surgery successfully separated the twins of a couple from Vamanapuram. The upper part of the heads of the one and a half year old children were fused together. The surgery lasted for 8 hours.....

- a. What name is given to such twins?
- b. What is the difference between fraternal twins and the twins mentioned in the article?
- c. How do they resemble identical twins?

Time - 5 min
Score - 4

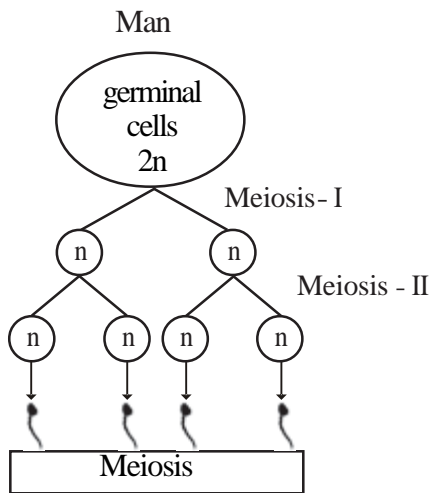
11. Read the news report and prepare a note based on the indications given

Test tube babies are not the same as normal babies. They are produced and get fully developed in the laboratory. Therefore there is no need for a woman to conceive and give birth to children.

This is an extract from an article written by a student of the seventh standard. Is there any correction necessary? If yes , what are they?

Time - 5 min
Score - 4

12. Observe the illustration



- a. Illustrate the formation of ovum according to the sample.
- b. What is the difference between meiosis I and meiosis II?
- c. Do all the cells formed as a result of meiosis develop into ovum ? Why?

Time - 6 min
Score - 4

13. The cilia of the fallopian tube and the accessory gland in man perform similar functions. Analyse the validity of this statement and record your opinion.

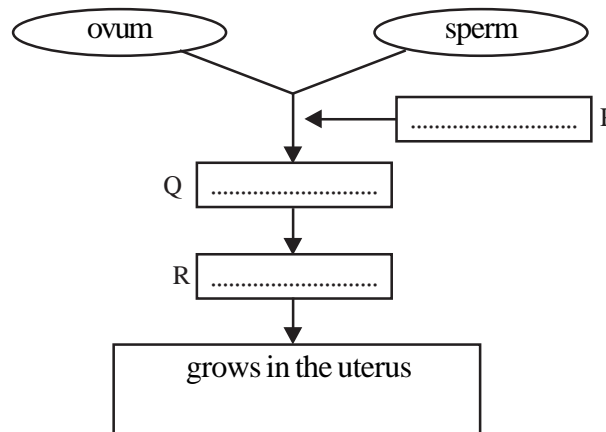
Time - 4 min

Score - 3

14. a) Complete the illustration

b) What will happen to the ovum if process P in diagram does not take place?

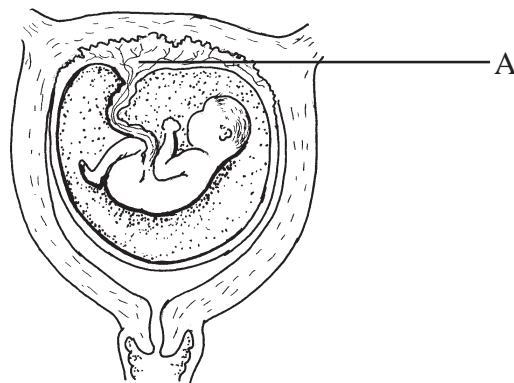
What is the natural phenomenon following this in women?



Time - 4 min

Score - 3

15. Redraw the picture and label the parts that perform the functions given below



a. The part through which exchange of materials takes place between the mother and the foetus

b. The part that connects 'A' to the foetus

c. protects the embryo

Time - 5 min

Score - 4

Unit - 8 Towards a healthy Life

PART - A

1. Identify the word pair relation and fill the blanks
 - a. Aedes albopictus :Dengue fever ::..... : Chikungunya
 - b. Culex mosquito: Filariasis :: Anopheles mosquito :

Time - 2 min
Score 2 x 1 = 2

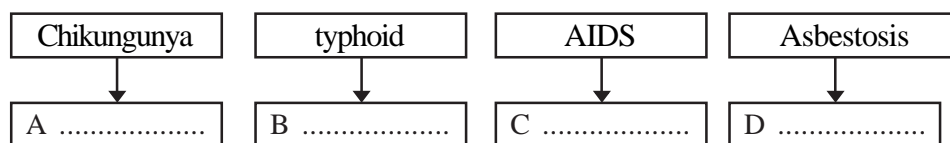
2. Find the odd one out. Write the common feature of others.
 1. Cholera, TB, hepatitis, typhoid
 2. Dengue fever, malaria, dysentery, filariasis
 3. Coltar, formaldehyde, tartrasin, betanin

Time - 2 min
Score 2 x 1 = 2

PART - B

3. Prepare the model of two placards to be used in the rally conducted on Anti tobacco day.

Time - 4 min
Score - 2
4. Certain diseases caused by the lack of social hygiene and their mode of transmission etc are given. Match them suitably:



Mode of transmission : polluted water ,mosquito, smoking, unsterilised needle, asbestos dust

Time - 4 min
Score - 2

PART - C

5. Choose the correct statements from column B and C and match with A

A Disease	B cause	C symptoms
1. Goitre	a. Deficiency of protein and energy	i. protruded belly, projected eyes
2. Kwashiorkar	b. Deficiency of iodine	ii. bent limbs and decayed teeth
3. Marasmus	c. Deficiency of iron	iii. Thyroid gland swell up
4. Rickets	d. Deficiency of protein	iv. Projected ribs and sunken eyes
	e. Deficiency of vitamin D	v. fatigue, tiredness

Time - 5 min

Score - 4

6. "Adolescents should pay more attention to cleanliness of the body than others." These are the words of a doctor who conducted a class on behalf of the School Health Club.

- a. What are the things to be taken care of in the protection of skin?
- b. Why is it said that adolescents should be more careful in protecting the skin ?

Time - 4 min

Score - 3

7. Certain features of a disease are given below

- Does not transmit through mosquitoes
- Cannot be cured
- Can be prevented effectively

1. Which is the disease?
2. Name the causative organism?
3. Write two ways of transmission of disease.

Time - 4 min

Score - 3

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