



BIOLOGY

BOOKS - EVERGREEN BIOLOGY (ENGLISH)

SAMPLE PAPER 2016

Section I

1. The exchange of chromatid parts between the maternal and paternal chromatids of a

pair of homologous chromosomes during meiosis.



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2. Name the following:

The number of individuals inhabiting per unit area.



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3. Which of the following properties of acquired immunity is the basis of vaccination?



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4. Name the following:

The pollutants that cannot be broken down to simple and harmless products.



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5. Name the following: The part of the brain that carries impulses from one hemisphere of the cerebellum to the other.



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6. In each set of terms given below, there is an odd one and cannot be grouped in the same category to which the other three belong. Identify the odd term in each set and name the category to which the remaining three

belong.

Example: Ovary, Fallopian tube, Ureter, Uterus.

Odd term : Ureter

Category: Parts of female reproductive system.

Sewage, Newspaper, Styrofoam, Hay.



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7. In each set of terms given below, there is an odd one and cannot be grouped in the same category to which the other three belong. Identify the odd term in each set and name

the category to which the remaining three belong.

Example: Ovary, Fallopian tube, Ureter, Uterus.

Odd term : Ureter

Category: Parts of female reproductive system.

Thymine, Cytosine, Adenine, Pepsin.



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8. In each set of terms given below, there is an odd one and cannot be grouped in the same category to which the other three belong.

Identify the odd terms in each set and name the category to which the remaining three belong.

Example: Eye, Ear, Nose, Lungs

Odd term: Lungs

Category: Sense organs

i. Malleus, Iris, Incus, Stapes

ii. Amoeba, Euglena, Bacteria, Paramecium

iii. Snake, Fish, Earthworm, Bird

iv. Squamous, Muscular, Columnar, Cuboidal

v. Pitcher plant, Rose plant, Venus fly trap,

Sundew



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9. In each set of terms given below, there is an odd one and cannot be grouped in the same category to which the other three belong. Identify the odd term in each set and name the category to which the remaining three belong.

Example: Ovary, Fallopian tube, Ureter, Uterus.

Odd term : Ureter

Category: Parts of female reproductive system.

Cortisone, Somatotropin, Adrenocorticotrophic hormone, Vasopressin.



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10. In each set of terms given below, there is an odd one and cannot be grouped in the same category to which the other three belong. Identify the odd term in each set and name the category to which the remaining three belong.

Example: Ovary, Fallopian tube, Ureter, Uterus.

Odd term : Ureter

Category: Parts of female reproductive system.

Typhoid, Haemophilia, Albinism, Colour blindness.



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11. Complete the following paragraph by filling in the blanks (1) to (V) with appropriate words:

The amount of urine output is under the regulation of a hormone called (i)_____

secreted by the (ii)_____lobe of the

pituitary gland. If this hormone secretion is

reduced, there is an increased production of

urine. This disorder is called (iii)_____ .

Sometimes excess glucose is passed with urine due to hyposecretion of another hormone called (iv) _____ leading to the cause of a disease called (v)_____



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12. What is the exact location of Centromere.



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13. State the exact location of the following
Chordae tendinae



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14. State the exact location of the Thyroid
gland



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15. State the exact location of the Ciliary body



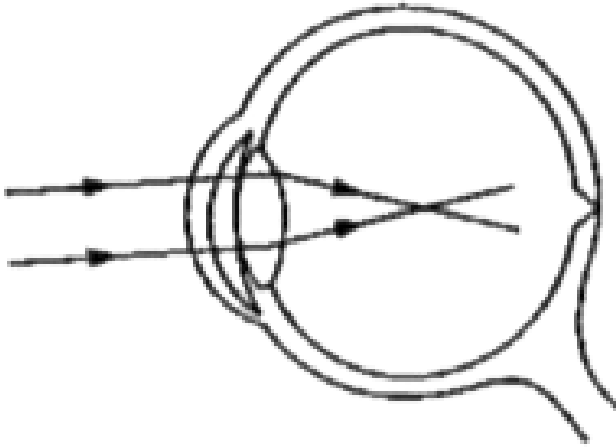
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16. What is the exact location of proximal convoluted tubule.



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17. Given below is a diagram depicting a defect of the human eye, study the same and then answer the questions that follow:



(i) Name the defect shown in the diagram.

(ii) What are the two possible reasons that cause this defect?

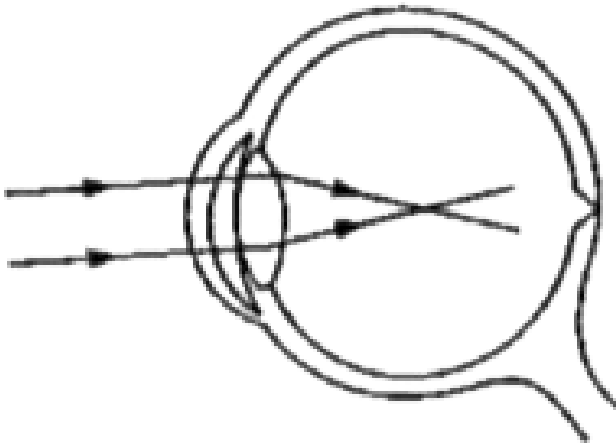
(iii) Name the type of lens used to correct this defect.

(iv) With the help of a diagram show how the defect shown above is rectified using a suitable lens.



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18. Given below is a diagram depicting a defect of the human eye, study the same and then answer the questions that follow:



- (i) Name the defect shown in the diagram.
- (ii) What are the two possible reasons that

cause this defect?

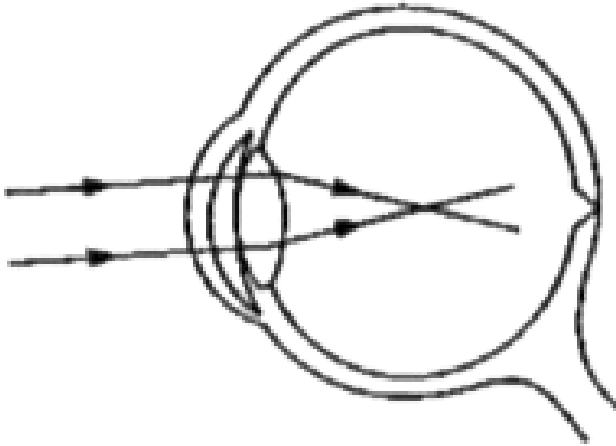
(iii) Name the type of lens used to correct this defect.

(iv) With the help of a diagram show how the defect shown above is rectified using a suitable lens.



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19. Given below is a diagram depicting a defect of the human eye, study the same and then answer the questions that follow:



(i) Name the defect shown in the diagram.

(ii) What are the two possible reasons that cause this defect?

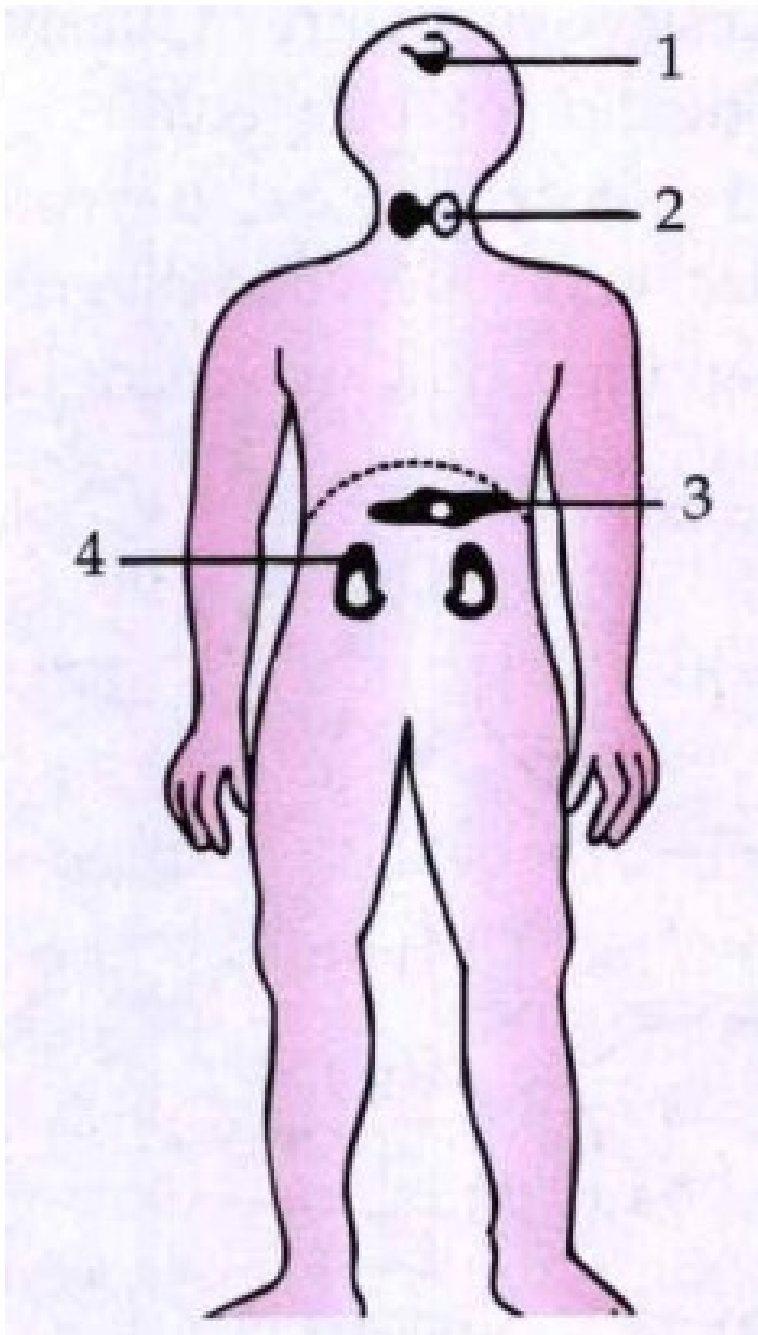
(iii) Name the type of lens used to correct this defect.

(iv) With the help of a diagram show how the defect shown above is rectified using a suitable lens.



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20. Given below is a diagram depicting a defect of the human eye. Study the same and then answer the questions that follow :



Name the parts labelled 1 to 4.



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21. Given in the box below are a set of 14 biological terms. Of these, 12 can be paired into 6 matching pairs. Out of the six pairs, one has been done for you as an example.

Example : Endosmosis - Turgid cell.

Cushing's syndrome, Turgid cell, Iris, Free of rod and cone cells, Colour of eyes, Hypoglycemia, Active transport, Acrosome, Addison's disease, Blind spot, Hyperglycemia, Spermatozoa, Endosmosis, Clotting of blood.



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22. State the main functions of:

Lymphocytes



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23. Write the location and functions of the following in human testes :

(a) Sertoli cells (b) Leydig cells



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24. State the exact location of the Guard cells:



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25. State one main function of each of the following:

(i) Cerebellum, (ii) Iris, (iii) Eustachian tube



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26. Mention one significant function of the following:

Corpus luteum



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Section I Choose The Correct Answer

1. Why do plant cells not burst when placed in water?



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2. Choose the correct answer from the given four options :

The individual flattened stacks of membranous structures inside the chloroplasts are known as



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3. Choose the correct answer from the given four options.

(i) The nephrons discharge their urine at the:

1)Urinary bladder

2)Urethra

3)Renal pelvis

4)Renal pyramid



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4. Gigantism and acromegaly are due to



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5. Choose the correct answer from the four options:

The mineral ion needed for the formation of blood clot is

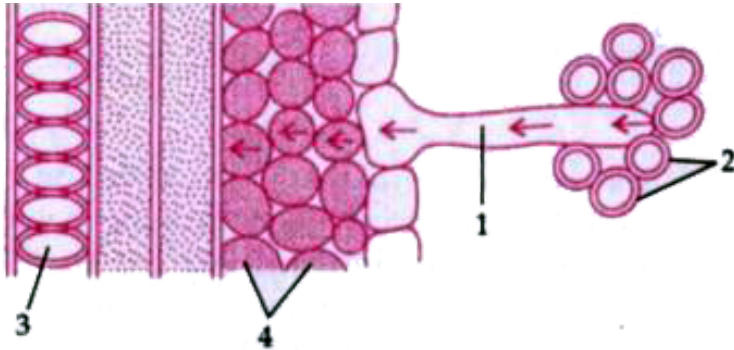


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Section II

1. The figure given below is a diagrammatic representation of a part of the cross section

of the root in the root hair zone. Study the same and then answer the questions that follow :

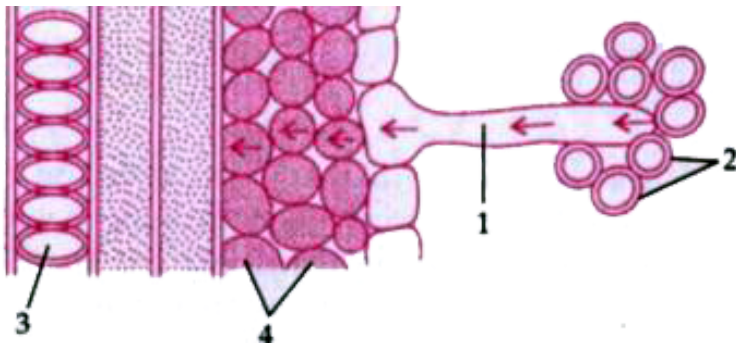


Name the parts indicated by the guidelines 1 to 4.



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2. The figure given below is a diagrammatic representation of a part of the cross section of the root in the root hair zone. Study the same and then answer the questions that follow :

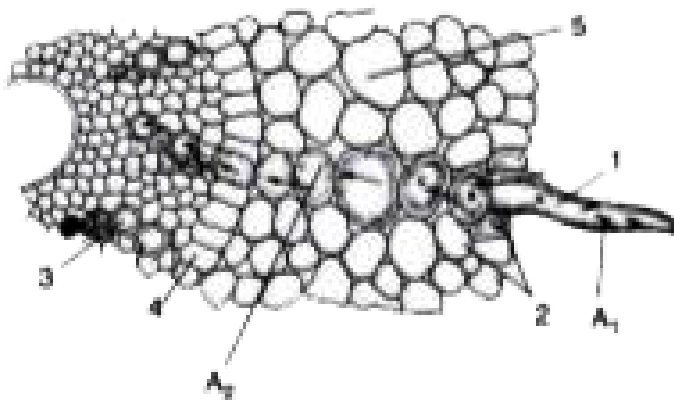


Which is the process that enables the passage of water from the soil into the root hair?



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3. The figure given below is a diagrammatic representation of a part of the cross-section of the root in the root hair zone. Study the same and then answer the questions that follow :

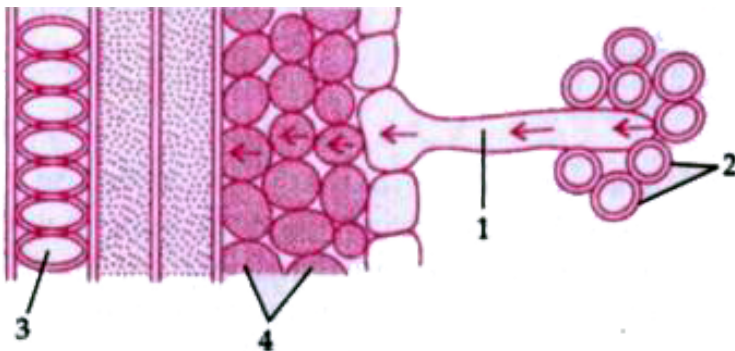


What pressure is responsible for the movement of water in the direction indicated by arrows ?



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4. The figure given below is a diagrammatic representation of a part of the cross section of the root in the root hair zone. Study the same and then answer the questions that follow :



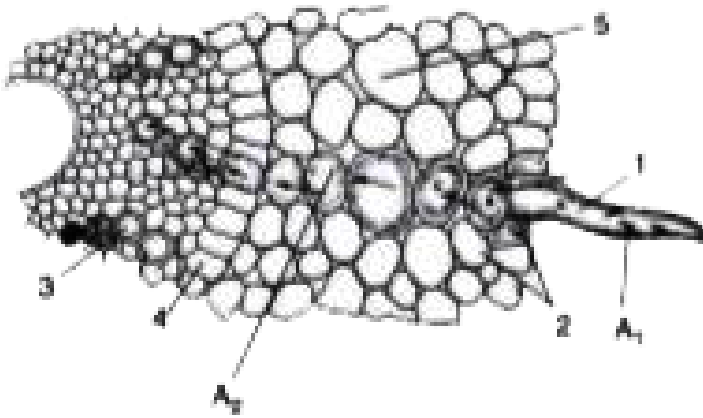
Due to an excess of this pressure sometimes

drops of water are found along the leaf margins of some plants especially in the early mornings. What is the phenomenon called ?



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5. The figure given below is a diagrammatic representation of a part of the cross-section of the root in the root hair zone. Study the same and then answer the questions that follow :



Draw a labelled diagram of the root hair cell as it would appear if some fertilizer is added to the soil close to it.



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6. Differentiate as directed :

Human skin cell and Human ovum (Number of

chromosomes).



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7. Differentiate between :

Sperm duct and fallopian tube (Function).



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8. Differentiate between the following pairs on the basis of what is mentioned within brackets

:

Red Cross and WHO (one activity).



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9. Give one difference between the following pairs on the basis of what is given in brackets :

Rods and Cones (Pigment present)



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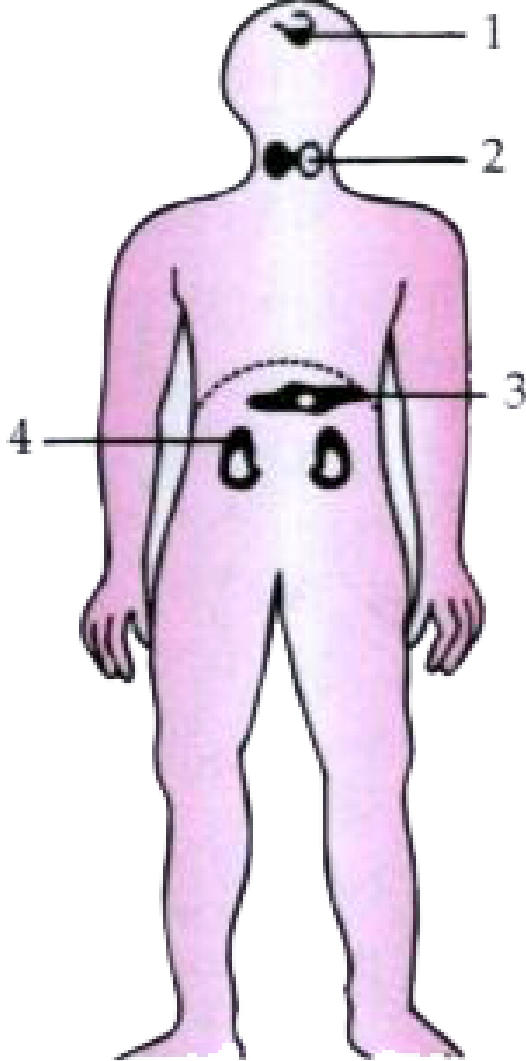
10. Tabulate differences between:

LUB and DUB (Names of valves whose closure produce sound



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11. Given below is the outline of the human body showing the important glands:

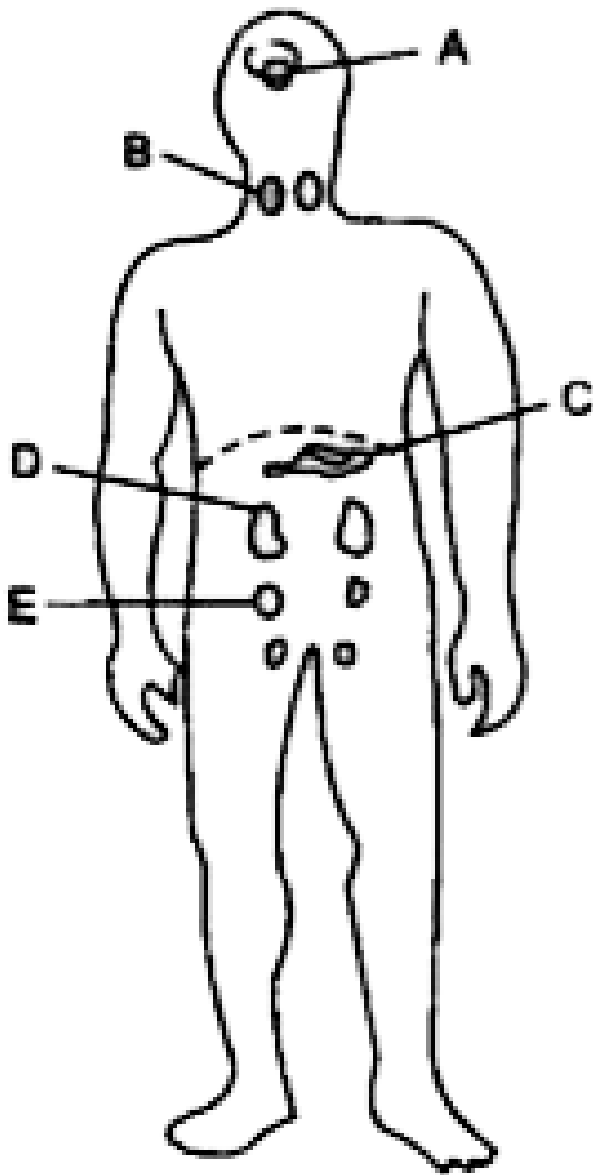


Name the glands marked 1 to 4



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12. Given below is the outline of the human body showing the important glands:

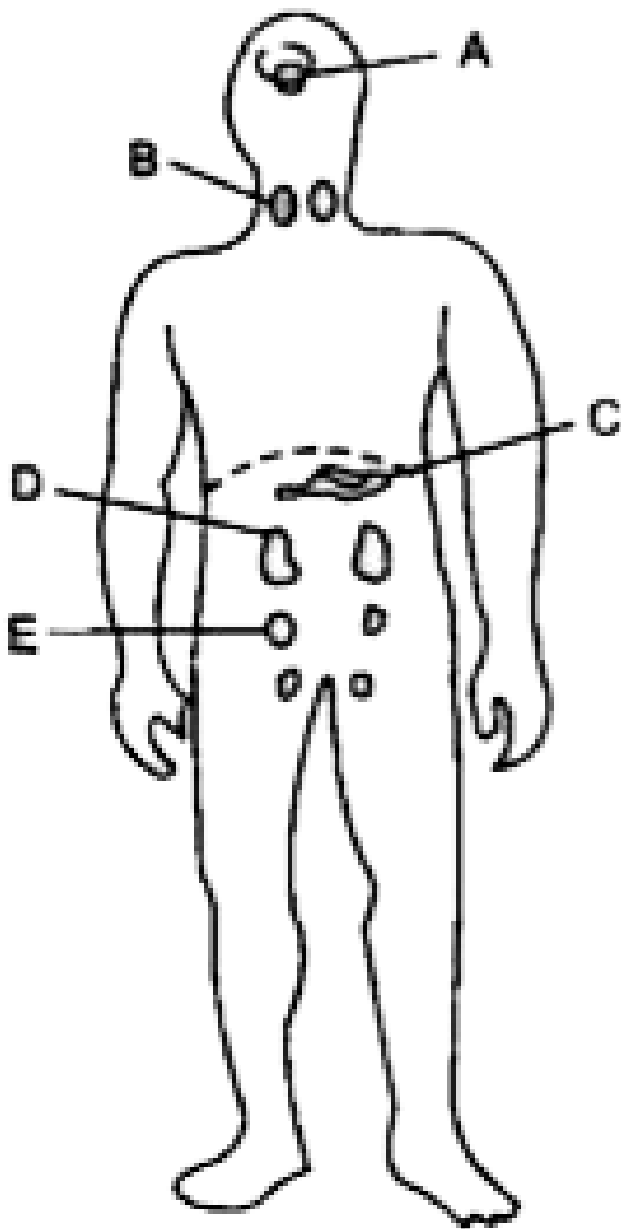


Name the hormone secreted by part B. Give one important function of this hormone.



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13. Given below is the outline of the human body showing the important glands:

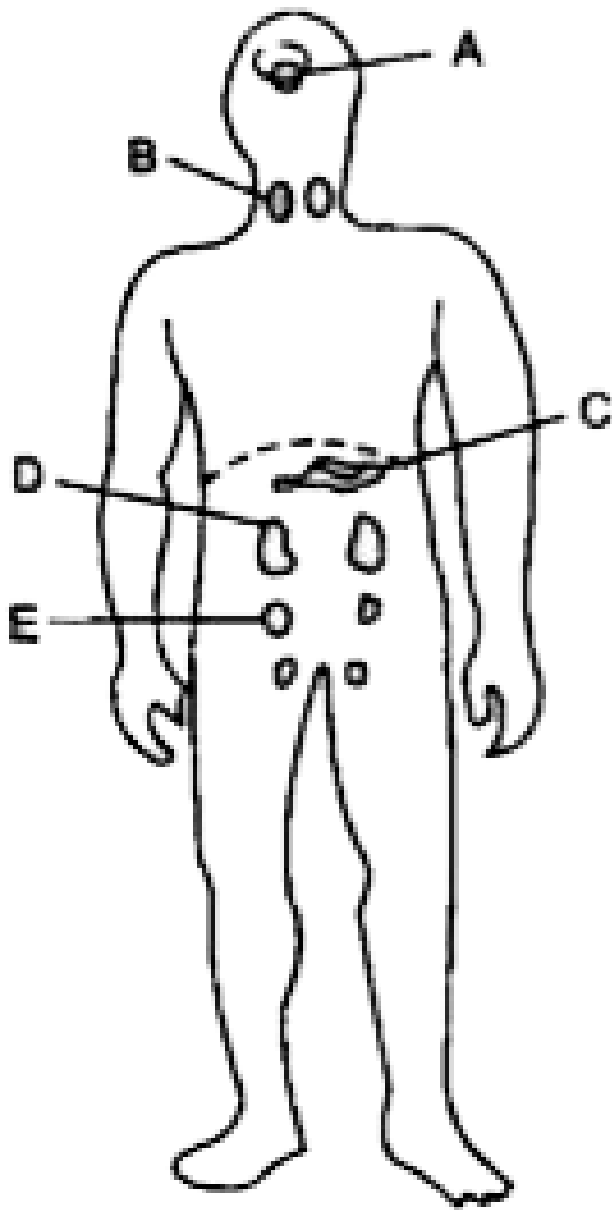


Name the endocrine part of the numbered C.



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14. Given below is the outline of the human body showing the important glands:



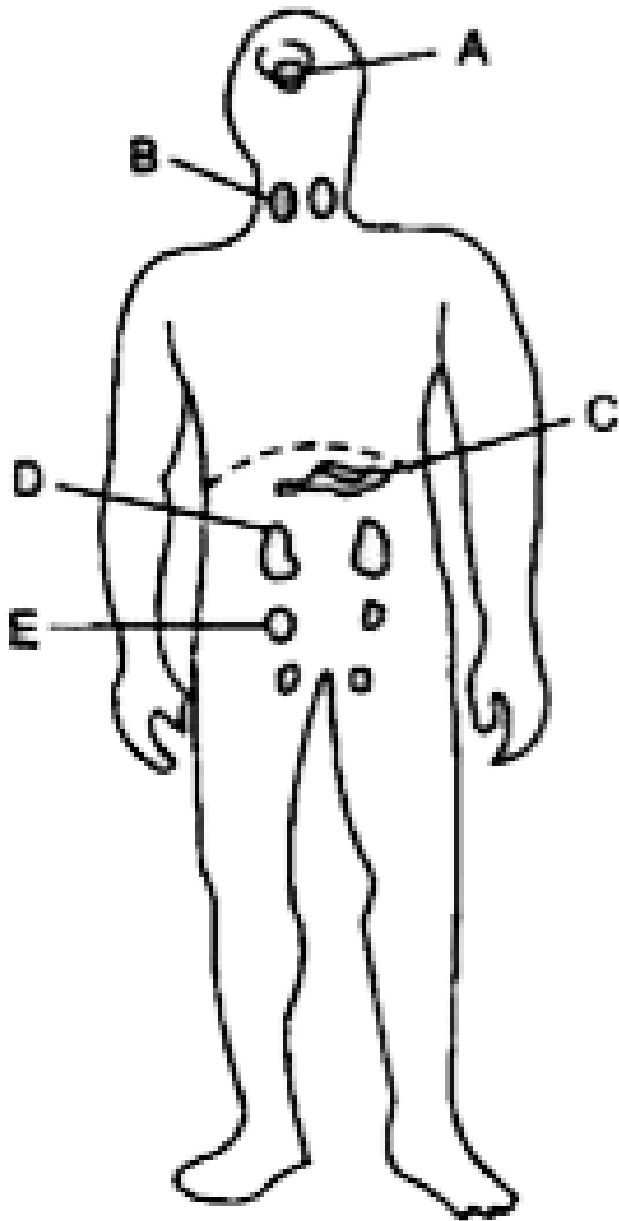
Why is the part labelled A called the master

gland? Which part of the forebrain controls the gland labelled A?



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15. Given below is the outline of the human body showing the important glands:

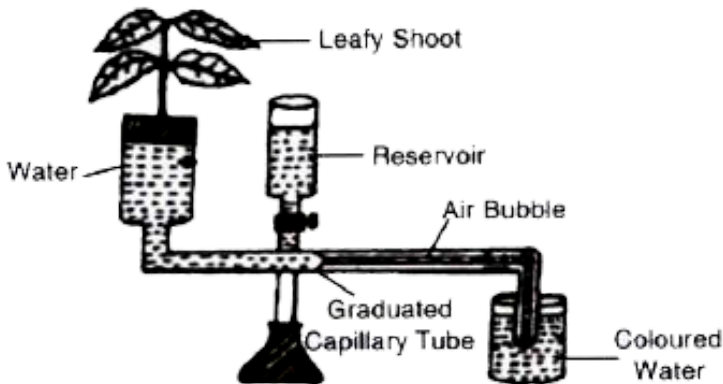


Name the gland that secretes the 'emergency hormone.



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16. The diagram of an apparatus given below demonstrates a particular process in plants. Study the same and answer the questions that follow :

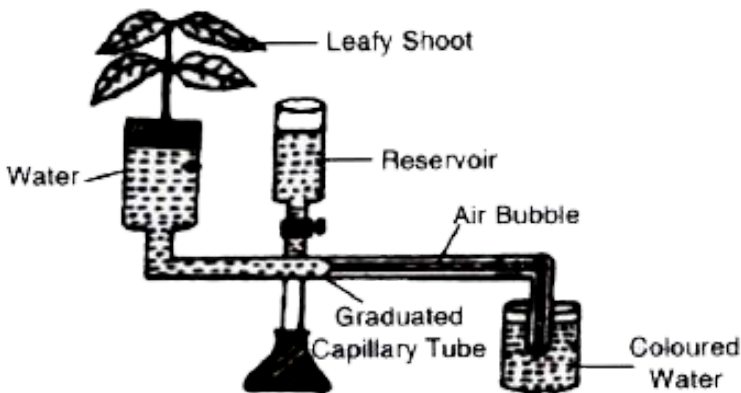


Name the apparatus.



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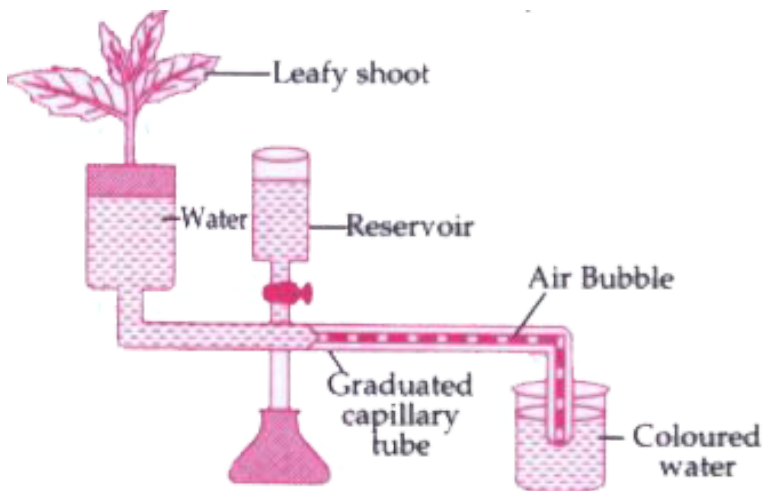
17. The diagram of an apparatus given below demonstrates a particular process in plants. Study the same and answer the questions that follow :



Which phenomenon is demonstrated by this apparatus?



18. The diagram of an apparatus given below demonstrates a particular process in plants. Study the same and answer the questions that follow :

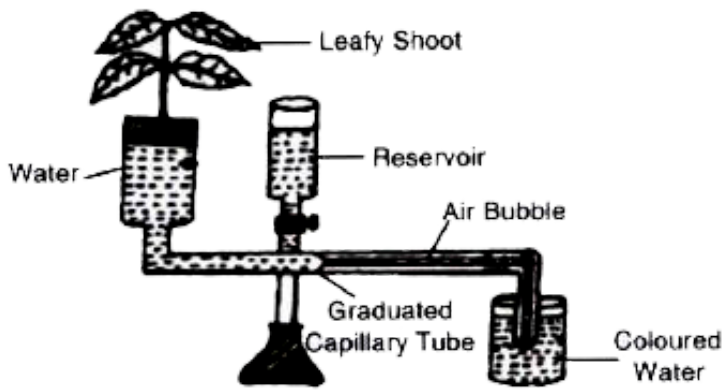


Explain the phenomenon mentioned in demonstrated



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19. The diagram of an apparatus given below demonstrates a particular process in plants. Study the same and answer the questions that follow :

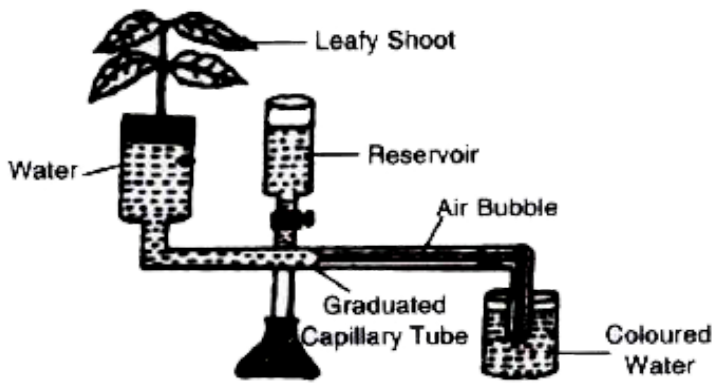


State two limitations of using this apparatus.



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20. The diagram of an apparatus given below demonstrates a particular process in plants. Study the same and answer the questions that follow :

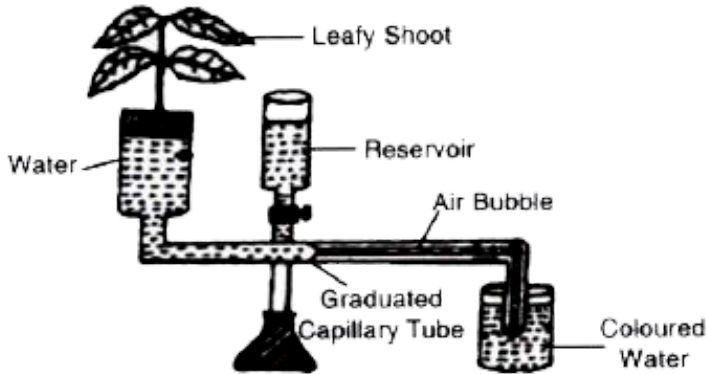


What is the importance of the air bubble in the experiment ?

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21. The diagram of an apparatus given below demonstrates a particular process in plants. Study the same and answer the questions that

follow :



Name the structures in a plant through which the above process takes place.

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22. Draw a well labelled diagram of the membranous labyrinth found in the inner ear.



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23. Based on the diagram drawn above in membranous labyrinth give a suitable term for each of the following descriptions: (1) The sensory cells that helps in hearing. (2) The part that is responsible for static balance of the body. (3) The membrane covered opening that connects the middle ear to the inner ear. (4) The fluid present in the middle chamber of cochlea. (5) The structure that maintains dynamic equilibrium of the body.



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24. Give technical terms for the following:

The permanent stoppage of the menstrual cycle in a woman aged 50 years.



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25. Name the pigment providing colour to urine.



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26. Name the following:

The vein which drains the blood from the intestine to the liver



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27. Name the following :

The canal through which the testes descend into scrotum just before birth



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28. Give the biological/technical term for the following:

The process causing an undesirable change in the environment.



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29. Name the The process of removal of nitrogenous wastes from the body.



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30. The repeating components of each DNA strand lengthwise.



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31. Give biological/ technical terms for the following:

An alternation in the genetic material that can be inherited.



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32. Give technical term for:

The process of uptake of mineral ions against the concentration gradient using energy from cell.



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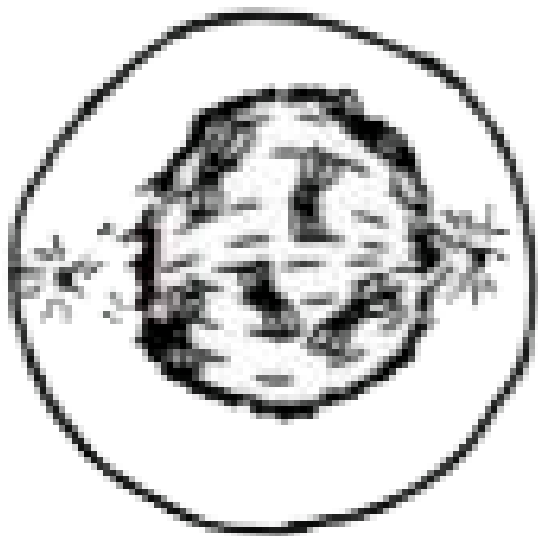
33. Name the following:

Blood vessels carrying blood to the left atrium



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34. The given diagram shows a stage during mitotic division in an animal cell:

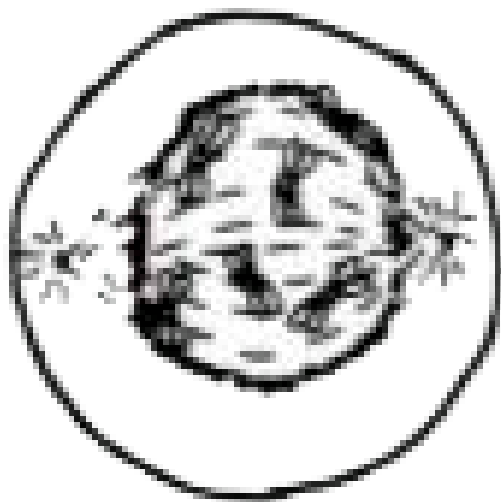


Identify the stage. Give a reason to support your answer.



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35. The given diagram shows a stage during mitotic division in an animal cell:

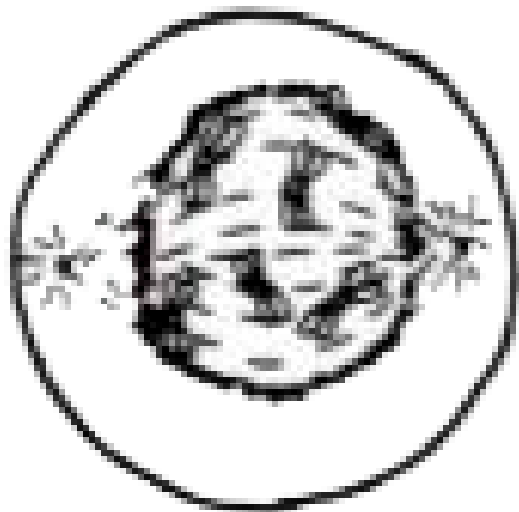


Draw a neat labelled diagram of the cell as it would appear in the next stage. Name the stage.



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36. The given diagram shows a stage during mitotic division in an animal cell:

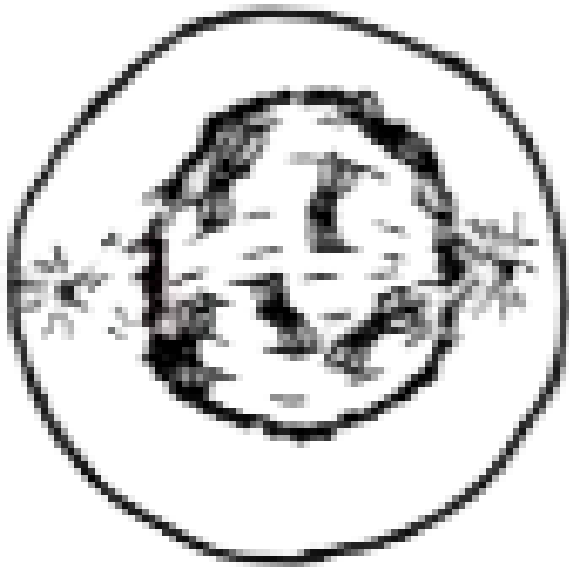


In what two ways is mitotic division in an animal cell different from the mitotic division in a plant cell?



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37. The given diagram shows a stage during mitotic division in an animal cell:



Name the type of cell division that occurs during:

A. Growth of a shoot

B. Formation of pollen grains.



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38. (i) Why is colour blindness more prominent in males than females?

(ii) Why is *Drosophila* used extensively for genetic studies?



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39. Give biological reasons for the following :

Injury to Medulla oblongata results in death.



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40. Give technical terms for the following:

The permanent stoppage of the menstrual cycle in a woman aged 50 years.



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41. Give scientific reasons for the following statements:

Loss of nucleus and mitochondria make erythrocytes more efficient in their function.



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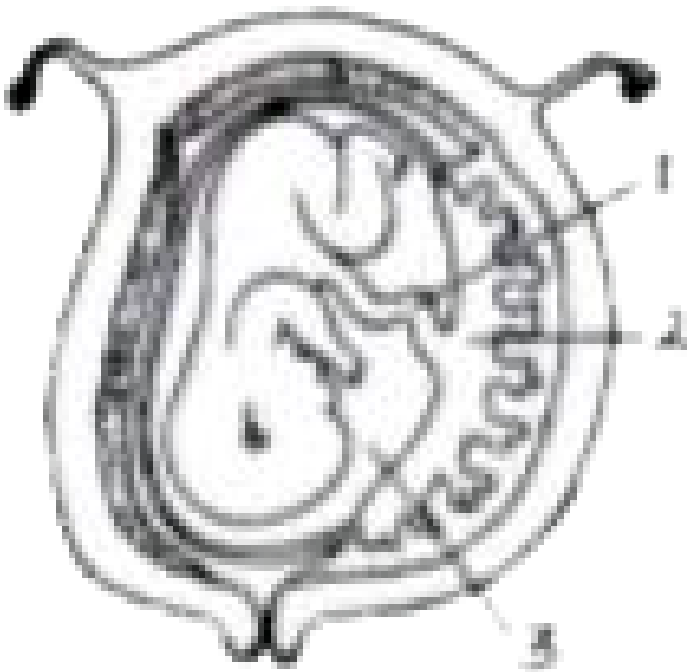
42. Explain briefly :

Blood flows in arteries in spurts and is under pressure



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43. The diagram given below is that of a developing human foetus. Study the diagram and then answer the questions that follow :



(i) Label the parts numbered 1 to 3 in the diagram.

(ii) Mention any two functions of the part labelled 2 in the diagram.

(iii) Explain the significance of the part numbered 3 in the diagram.

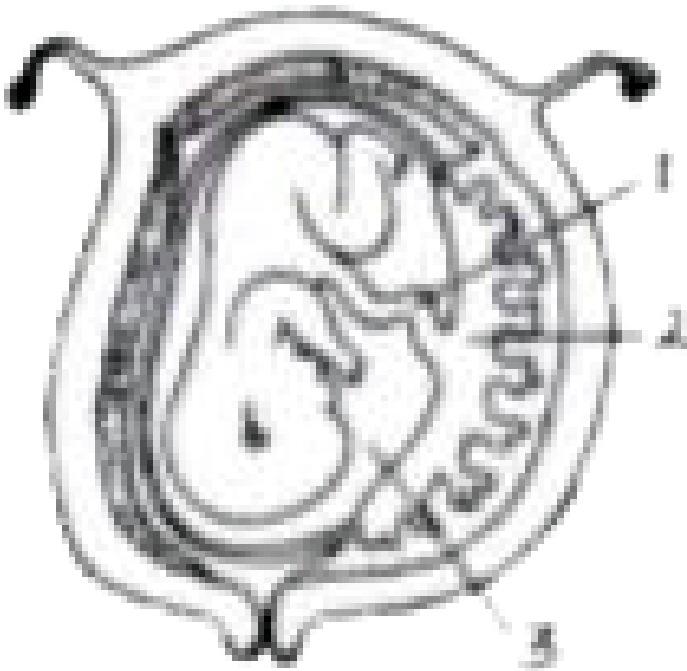
(iv) Define the term 'Gestation'. What is the normal gestational period of the developing human embryo?

(v) Mention the sex chromosomes in a male and female embryo.



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(i) Label the parts numbered 1 to 3 in the diagram.

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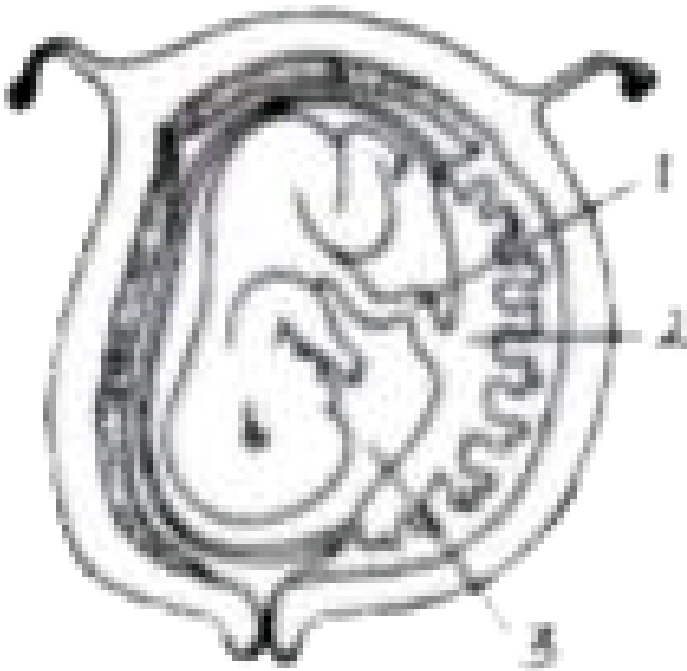
(iv) Define the term 'Gestation'. What is the normal gestational period of the developing human embryo?

(v) Mention the sex chromosomes in a male and female embryo.



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45. The diagram given below is that of a developing human foetus. Study the diagram and then answer the questions that follow :



(i) Label the parts numbered 1 to 3 in the diagram.

(ii) Mention any two functions of the part

labelled 2 in the diagram.

(iii) Explain the significance of the part numbered 3 in the diagram.

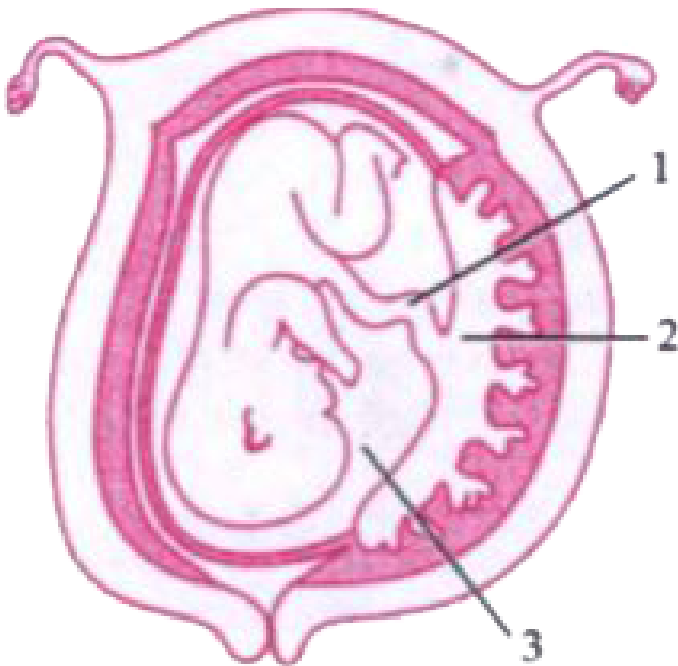
(iv) Define the term 'Gestation'. What is the normal gestational period of the developing human embryo?

(v) Mention the sex chromosomes in a male and female embryo.



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46. The diagram given below is that of a developing human foetus. Study the diagram and then answer the questions that follow :

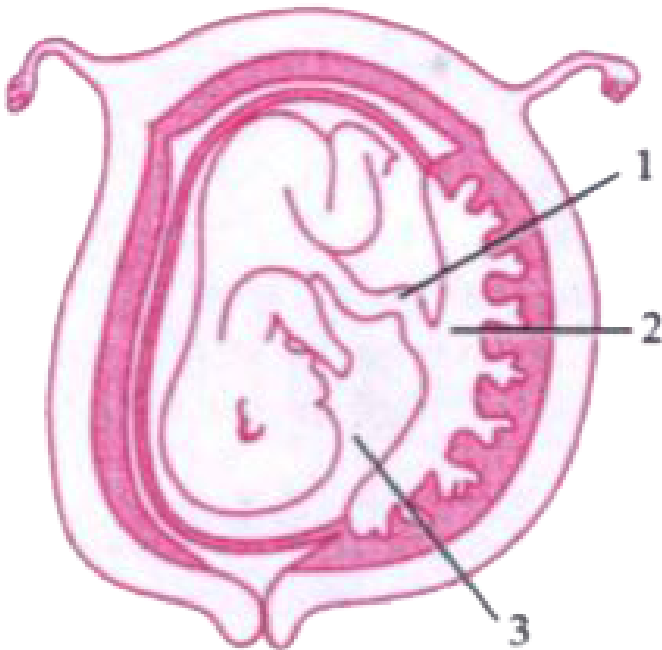


Define the term 'Gestation'. What is the normal gestational period of the developing human embryo ?



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47. The diagram given below is that of a developing human foetus. Study the diagram and then answer the questions that follow :

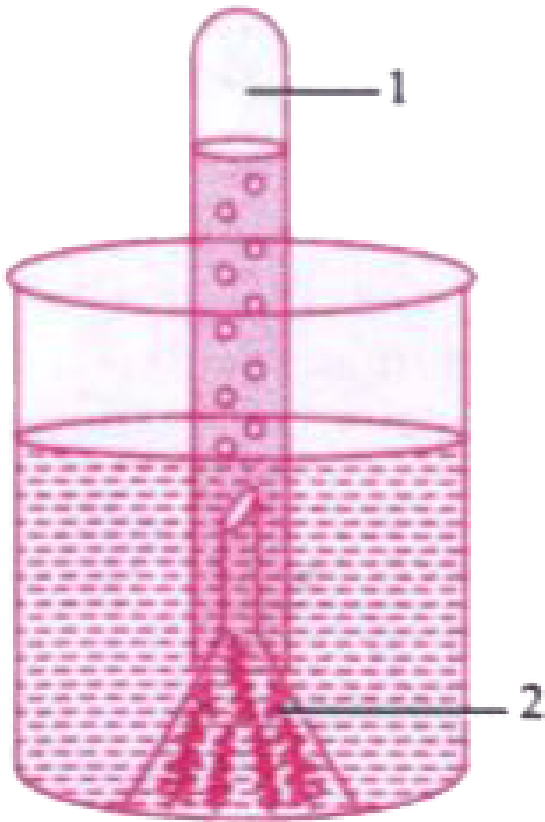


Mention the sex chromosomes in a male and female embryo.



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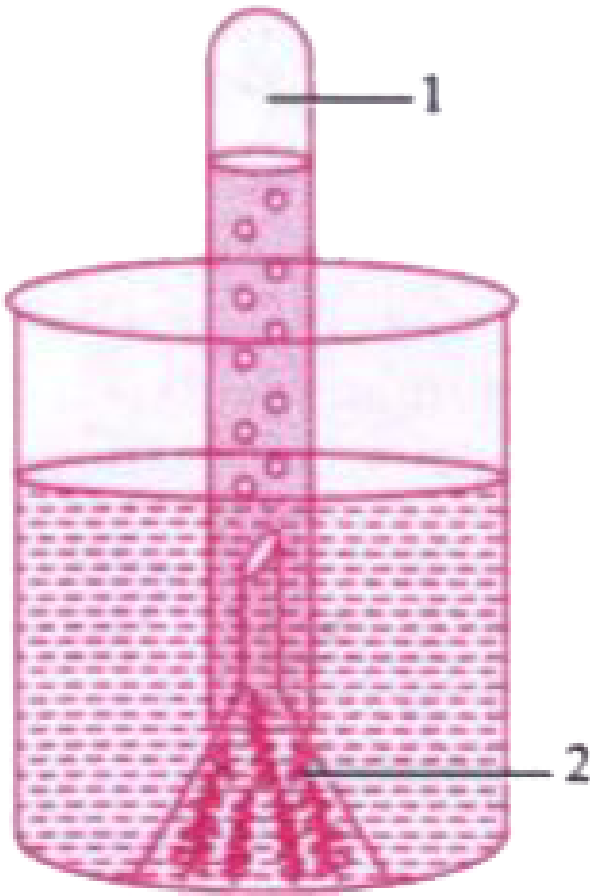
48. The following diagram demonstrates a physiological process taking place in green plants. The whole set up was placed in bright sunlight for several hours. Study the diagram and answer the questions that follow :



What aspect of the physiological process is being examined ?

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49. The following diagram demonstrates a physiological process taking place in green plants. The whole set up was placed in bright sunlight for several hours. Study the diagram and answer the questions that follow :

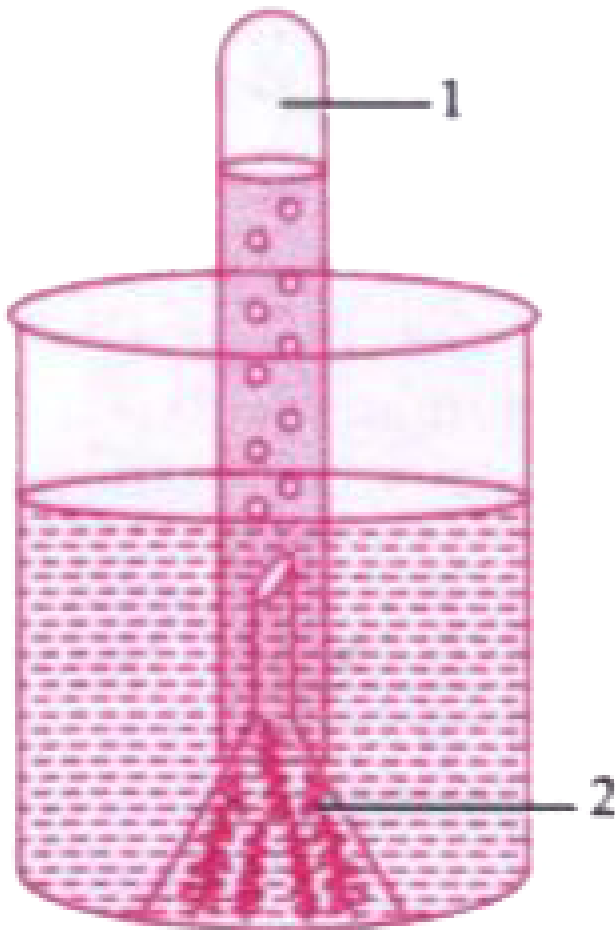


Explain the physiological process



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50. The following diagram demonstrates a physiological process taking place in green plants. The whole set up was placed in bright sunlight for several hours. Study the diagram and answer the questions that follow :

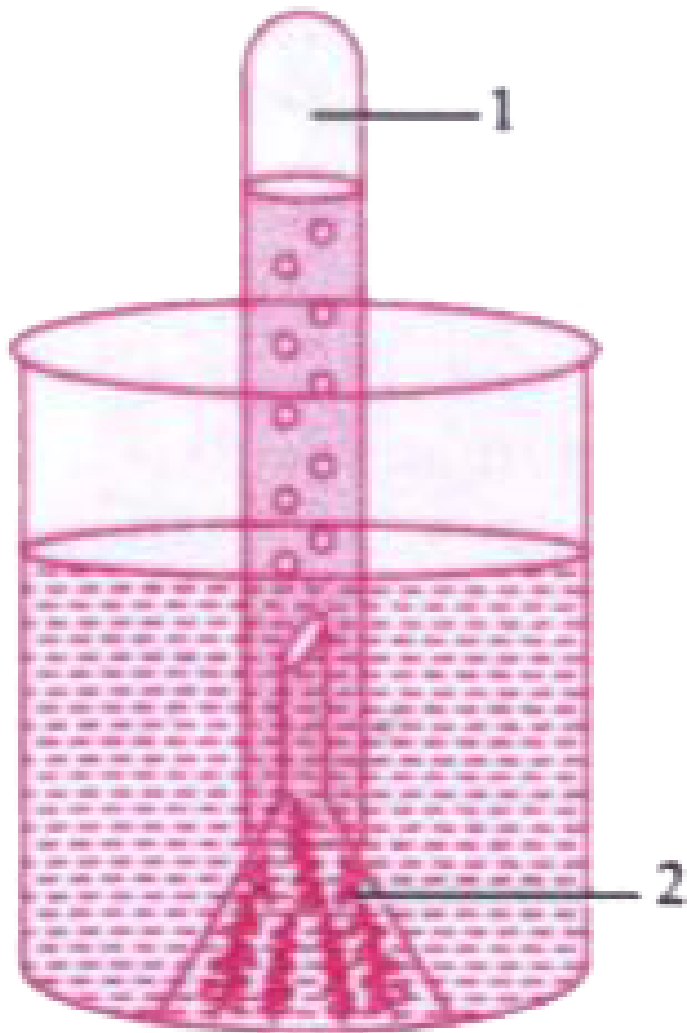


Label the parts numbered 1 and 2 in the diagram.



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51. The following diagram demonstrates a physiological process taking place in green plants. The whole set up was placed in bright sunlight for several hours. Study the diagram and answer the questions that follow :

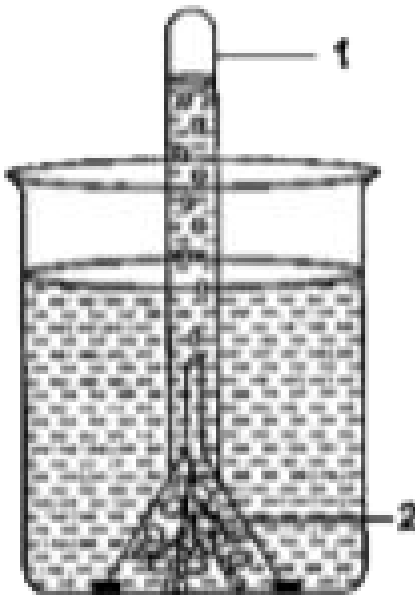


Write a well-balanced chemical equation for the physiological process



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52. The following diagram demonstrates a physiological process taking place in green plants. The whole set up was placed in bright sunlight for several hours. Study the diagram and answer the questions that follow:



What would happen to the rate of bubbling of the gas if a pinch of sodium bicarbonate is added to the water in the beaker? Explain your answer



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53. A homozygous tall plant (T) bearing red coloured (R) flowers is crossed with a homozygous dwarf (t) plant bearing white (r) flowers :

Give the genotype and phenotype of the plants of F_1 generation.



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54. A homozygous tall plant (T) bearing red coloured (R) flowers is crossed with a homozygous dwarf (t) plant bearing white (r) flowers :

Mention the possible combinations of the gametes that can be obtained from the F_1 hybrid plant.



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55. A homozygous tall plant (T) bearing red coloured (R) flowers is crossed with a homozygous dwarf (t) plant bearing white (r) flowers :

State the Mendel's law of Independent Assortment.



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56. A homozygous tall plant (T) bearing red coloured (R) flowers is crossed with a homozygous dwarf (t) plant bearing white (r) flowers :

Mention the phenotypes of the offspring obtained in F_2 generation.



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57. A homozygous tall plant (T) bearing red coloured (R) flowers is crossed with a

homozygous dwarf (t) plant bearing white (r) flowers :

What is the phenotypic ratio obtained in F_2 generation ?



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58. Explain the term Reflex action.



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59. With reference to the functioning of the eye, answer the questions that follow :

What is meant by power of accommodation of the eye?



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60. Briefly explain the following:

Photophosphorylation



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61. Briefly explain the Hormones



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62. An electrical synapse differs from a chemical synapse in that the electrical synapse :



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