My Revision Deck

Term Examination — Answer Key

2026 – 2027

Grade: 8 **Subject:** Biology

Time: 2½ hours **Maximum Marks:** 80

Section A

1. **Select the correct answers to the questions from the given options. (Do not copy the questions, write the correct answer only).**

(i) What changes does the parasympathetic nervous system bring about in the body? [1]

(a) It dilates the pupil of the eyes, constricts the vessels of the skin and accelerates the heart rate fast

(b) It controls all higher mental activities such as intelligence, consciousness, will power and thinking

(c) It causes constriction of the pupil of the eyes, dilation of blood vessels and slowing of the heart rate

(d) It controls all reflex actions below the neck and the messages between the limbs and the brain

Explanation: *The parasympathetic nervous system is responsible for the constriction of the pupil of the eyes, dilation of blood vessels and slowing down of the heart rate — opposite to the sympathetic system.*

(ii) Cortical hormones from the adrenal cortex help the body adapt to which of the following kinds of stresses? [1]

(a) Stresses such as extreme heat, cold and infections that the body has to endure

(b) Stresses such as sudden danger and fear that demand an instant body response

(c) Stresses such as low blood sugar that need a quick supply of glucose to muscles

(d) Stresses such as a lack of iodine that enlarges the thyroid gland in the neck

Explanation: *The cortical hormones adapt the body to stresses such as extreme heat, cold, infections etc.*

(iii) In pig farming, the animal fat obtained from pigs that is used as a cooking medium and in the manufacture of soaps and lubricants is known as: [1]

(a) Pork

(b) Bacon

(c) Ham

(d) Lard

Explanation: *In pig farming (piggery), pork is the meat, bacon is from the back and sides, ham is from the back of the thigh, and lard (animal fat) is used as a cooking medium and in the manufacture of soaps, lubricants, candles and grease.*

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(iv) Budding is described as a common method of reproduction in which of the following animals? [1]

(a) Amoeba

(b) Planaria

(c) Starfish

(d) Hydra

Explanation: *Budding is a common method of reproduction in Hydra. Small buds grow on the outside of its body, increase in size, get separated and lead an independent life when they are big enough.*

(v) Why are capillaries described as the "principal sites of exchange" in the body? [1]

(a) Because their thick muscular walls let oxygen and nutrients pass from the blood into the tissues

(b) Because blood is exchanged there between arteries and veins, mixing oxygenated and deoxygenated blood

(c) Because only oxygen and carbon dioxide are exchanged there, while nutrients pass through the veins

(d) Because water, oxygen, carbon dioxide, nutrients and wastes are exchanged there between blood and tissues

Explanation: *Capillaries are the principal sites where the exchange of water, oxygen, carbon dioxide and many other nutrients and waste substances between the blood and body tissues takes place.*

(vi) In which Indian state is the Jim Corbett National Park located and which animal is it especially known for? [1]

(a) It is located in Gujarat and is famous for the lion that lives in its forest

(b) It is located in West Bengal and is famous for the rhinoceros that lives in its forest

(c) It is located in Uttarakhand and is famous for the tiger that lives in its forest

(d) It is located in Kerala and is famous for the leopard that lives in its forest

Explanation: *Jim Corbett National Park is located in Uttarakhand. Its flora includes pine trees, shrubs and grasses; its most famous animal is the tiger.*

(vii) What does the somatic nervous system connect? [1]

(a) It connects the autonomic nervous system to the various endocrine glands of the human body

(b) It connects the central nervous system to the organs, the muscles and the skin of the body

(c) It connects the brain only to the spinal cord through one thick cable made of nerve fibres

(d) It connects the cranial nerves to the spinal nerves through a network of fibres in the body

Explanation: *The somatic nervous system connects the CNS to the organs, muscles and skin. It carries motor and sensory information both to and from the CNS.*

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(viii) During their menstrual cycle, girls are advised to take special care of which of the following? [1]

(a) Diet
(b) Cleanliness
(c) Sleep
(d) Physical exercise

Explanation: *If cleanliness is not maintained, there are chances of catching bacterial infection. Girls should take special care of cleanliness during the time of their menstrual cycle.*

(ix) How does sweet potato reproduce vegetatively through its roots? [1]

(a) Its roots break into fragments that each regrow into a new individual
(b) Its roots produce spores on their underside that germinate to form new plants
(c) Its roots develop adventitious buds in their margins similar to Bryophyllum
(d) Its many large swollen fleshy roots each store food and grow new plants

Explanation: *Plants like sweet potato develop numerous large swollen fleshy roots. Each such root contains a large quantity of food inside it and is capable of giving rise to a new plant, making it a form of vegetative reproduction through the root.*

(x) A single ejaculation of semen in humans contains approximately how many sperms? [1]

(a) About 200 to 400 sperms
(b) About 2,000 to 4,000 sperms
(c) About 20 to 40 million sperms
(d) About 20,000 to 40,000 sperms

Explanation: *Semen is a milky white fluid with an average amount of 2–3 mL in a single ejaculation. It contains 20,000,000 to 40,000,000 sperms.*

(xi) Assertion (A): Most fungi are called saprophytes. [1]
Reason (R): Fungi possess chlorophyll and prepare their own food by photosynthesis.

(a) Both A and R are true and R is the correct explanation of A
(b) Both A and R are true but R is not the correct explanation of A
(c) A is true but R is false
(d) A is false but R is true

Explanation: *Most fungi are called saprophytes because they live on dead and decaying organic matter (A is true). However, R is false — fungi do not have chlorophyll and cannot prepare their own food.*

(xii) Assertion (A): Diabetes and heart attack are examples of communicable diseases. [1]
Reason (R): Non-communicable diseases are not caused by any germ and cannot spread from an infected person to a healthy one.

(a) Both A and R are true and R is the correct explanation of A
(b) Both A and R are true but R is not the correct explanation of A
(c) A is true but R is false
(d) A is false but R is true

Explanation: *Diabetes and heart attack are examples of NON-COMMUNICABLE diseases, not communicable diseases (A is false). The reason correctly defines non-communicable diseases — they are not caused by germs and are non-transmissible (R is true).*

(xiii) Assertion (A): A tick that sucks the blood of a dog for days is a parasite and not a predator. [1]
Reason (R): A predator catches and kills its prey for food, while a parasite lives on its host and gains food at the host's cost.

(a) Both A and R are true and R is the correct explanation of A

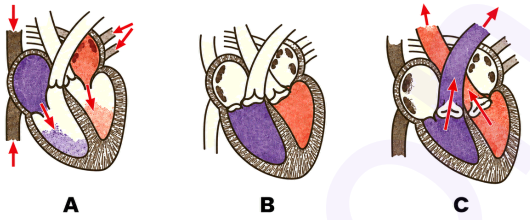
(b) Both A and R are true but R is not the correct explanation of A

(c) A is true but R is false

(d) A is false but R is true

Explanation: *A is true: the tick lives on the dog and feeds on its blood without killing it, so the tick gains and the dog (the host) is at a loss. R is true and explains A: a predator kills its prey for food, whereas a parasite gets free lodging and meals at the cost of its host.*

(xiv) Observe the three-stage diagram showing the working of the heart through one full beat. Which of the given options best describes the state of the AV (atrio-ventricular) valves in stage A? [1]



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(a) The AV valves are closed, and the semi-lunar valves are open as the ventricles contract

(b) The AV valves are open, allowing blood to flow from the atria into the ventricles

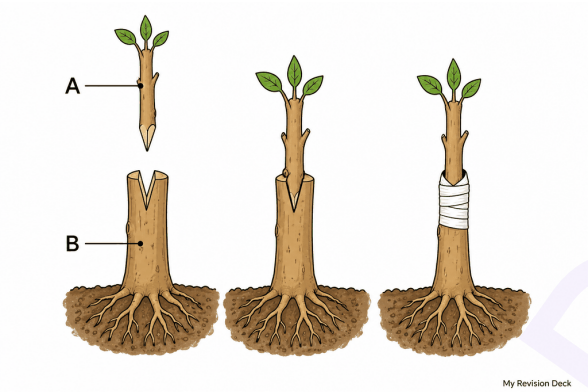
(c) The AV valves are closed, as both ventricles are already full of blood

(d) The AV valves are open, allowing blood to flow back from the ventricles to the atria

Explanation: *When the auricles contract and the ventricles begin to fill (stage A), the AV valves are open. They close with a sound only when the ventricles are full of blood (end of auricular contraction).*

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(xv) Observe the diagram of grafting, in which the upper part is labelled 'A' and the lower part is labelled 'B'. Which of the given options best identifies A and B and explains why their cambium layers must come into close contact? [1]



Source: MyRevisionDeck | Internal | Proprietary

(a) A is the stock and B is the scion; their cambium layers must contact so the scion can absorb water from the soil below

(b) A is the scion and B is the stock; their cambium layers must contact so that growth may continue in the grafted plant

(c) A is the explant and B is the callus; they must contact so the explant can absorb nutrients from the callus medium

(d) A is the rootstock and B is the bud; they must contact so the bud can produce flowers and seeds independently

Explanation: *In grafting, A, the small shoot of the desired variety that is fixed on, is the scion, and B, the plant receiving it, is the stock. For a successful graft, the cambium layers of the stock and the scion must come into very close contact so that growth may continue.*

2. **(i) Name the following:**

(a) The long process arising from the cell body of a neuron. [1]
Axon

(b) The ailment in infants caused by insufficient thyroxine that results in physical and mental retardation. [1]
Cretinism

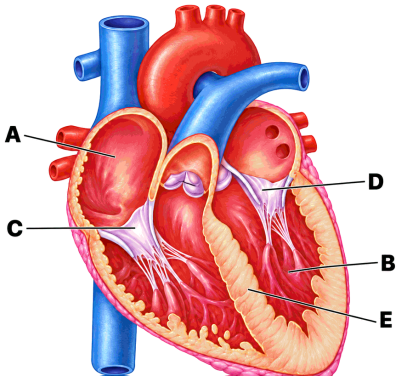
(c) The flattened part of the stalk (pedicel) from which the petals and other floral parts arise. [1]
Thalamus

(d) The cell formed when the nucleus of a sperm fuses with the nucleus of an egg during fertilisation. [1]
Zygote

(e) The virus that causes AIDS by weakening the body's immune system. [1]
HIV

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(ii) Label the parts of the human heart shown in the internal structure diagram.



Source: MyRevisionDeck | Internal

(a) Label A [1]
Right atrium

(b) Label B [1]
Left ventricle

(c) Label C [1]
Tricuspid valve

(d) Label D [1]
Bicuspid valve

(e) Label E [1]
Septum

(iii) Arrange and rewrite the terms in each group in the correct order to be in a logical sequence beginning with the term that is underlined:

(a) Food stored as starch / <u>Glucose produced in photosynthesis</u> / Food reaches all parts of the plant including the roots / Food transported as sucrose solution in phloem [1]
Order: Glucose produced in photosynthesis → Food stored as starch → Food transported as sucrose solution in phloem → Food reaches all parts of the plant including the roots

(b) Androgens make hair start growing on the face / <u>Testes produce male sex hormones called androgens</u> / The boy soon finds himself having to shave / FSH from the pituitary gland activates the androgens [1]
Order: Testes produce male sex hormones called androgens → FSH from the pituitary gland activates the androgens → Androgens make hair start growing on the face → The boy soon finds himself having to shave

(c) Boy is later injected with smallpox virus and shows no sign of disease / <u>Jenner observes that milkmaids with cowpox never get smallpox</u> / Pasteur confirms findings and develops vaccines for anthrax and cholera / Cowpox material is introduced into body of an eight-year-old boy [1]
Order: Jenner observes that milkmaids with cowpox never get smallpox → Cowpox material is introduced into body of an eight-year-old boy → Boy is later injected with smallpox virus and shows no sign of disease → Pasteur confirms findings and develops vaccines for anthrax and cholera

(d) Branch develops roots at node / Ring of bark removed at node / Lower branch bent to ground / Branch covered with soil and held down [1]

Order: Lower branch bent to ground → Ring of bark removed at node → Branch covered with soil and held down → Branch develops roots at node

(e) Brain records information / Hands hold the plate / Eyes look at the food / Fingers push food into mouth [1]

Order: Eyes look at the food → Brain records information → Hands hold the plate → Fingers push food into mouth

(iv) Choose the odd one out from the following terms and name the category to which the others belong:

(a) Cell wall / Cell membrane / Nucleus / Sieve plate [1]

Odd one out: Sieve plate

Category of remaining: Structures found in a root hair cell

Explanation: *Cell wall, cell membrane and nucleus are all structures found in a root hair cell. A sieve plate is the perforated end wall of a sieve tube in the phloem.*

(b) Murrah / Mehsana / Sahiwal / Surti [1]

Odd one out: Sahiwal

Category of remaining: Indian breeds of buffaloes

Explanation: *Murrah, Mehsana and Surti are all Indian breeds of buffaloes. Sahiwal is a breed of cow, not a buffalo.*

(c) Blood / Tissue fluid / Lymph / Saliva [1]

Odd one out: Saliva

Category of remaining: Three principal fluids of the body in the circulatory and lymphatic systems

Explanation: *Blood, tissue fluid and lymph are the three principal fluids of the body in the circulatory and lymphatic systems. Saliva is a digestive secretion produced by the salivary glands.*

(d) Pollination of flowers by animals / Seed dispersal by animals / Fungus–alga partnership / Predation [1]

Odd one out: Predation

Category of remaining: Examples of symbiosis or symbiotic relationships

Explanation: *Pollination of flowers by animals, seed dispersal by animals and the fungus–alga partnership in lichens are all examples of symbiosis, where both species benefit. Predation is a different kind of interaction: the predator catches and kills other organisms for food.*

(e) Marigold / Maize / Dahlia / Salvia [1]

Odd one out: Maize

Category of remaining: Insect-pollinated plants

Explanation: *Marigold, dahlia and salvia are all insect-pollinated plants with large colourful flowers. Maize is wind-pollinated with small inconspicuous flowers and produces large quantities of dry light pollen.*

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(v) Match the items given in Column A with most appropriate ones in Column B and rewrite the correct matching pairs: [5]

Column A	Column B
(a) Tracheids	(i) Elongated dead xylem cells with tapering ends
(b) Semi-permeable membrane	(ii) Conducting system of a plant consisting of xylem and phloem
(c) Root hairs	(iii) End walls between phloem tubes, through which food passes
(d) Sieve plates	(iv) Osmosis takes place across it
(e) Vascular bundle	(v) Epidermal outgrowths giving a large surface area

(a) → (i)
(b) → (iv)
(c) → (v)
(d) → (iii)
(e) → (ii)

Section B

(Attempt all questions from this Section.)

3. (i) What kind of reflexes are salivation when hungry, swallowing and peristalsis? [1]
Model answer: Salivation when hungry, swallowing and peristalsis are natural reflexes that provide functional efficiency to the body.

(ii) The heart is the pumping organ of the human body.

(a) What are cardiac muscles and what is their unique feature? [1]
Model answer: Cardiac muscles are the specialised muscles that make up the heart, and their unique feature is that they show continuous contraction and relaxation without any rest throughout life.

(b) What role does the SA node play in the heart? [1]
Model answer: The SA node generates the electrical impulse that sets the rhythm of the heart's contractions and relaxations, hence it is called the natural pacemaker of the heart.

(iii) Why are micronutrients important for plants despite being needed in very small amounts? Give any one example with its deficiency symptom. [2]
Model answer: Micronutrients are essential for plants to grow well and complete their life-cycle properly. Though they are required in very small amounts, their lack causes deficiency diseases in plants. For example, iron (Fe) is a constituent of some proteins in plants, and its deficiency causes yellowing of leaves.

Additional points a student may include: Manganese (Mn) is a constituent of some enzymes in plants, and its deficiency causes yellowing of leaves with grey spots. Zinc (Zn) is a constituent of plant hormones and activates enzymes, and its deficiency causes deshaped leaves, yellowing of leaves and stunted plant growth.

(iv) State the two roles of the vagina in the human female. [2]
Model answer: The vagina receives the male's penis during copulation. It also serves as the birth canal through which the baby is born.

(v) Soil is much more than ground beneath our feet — it sustains a community of life.

(a) Name two mineral nutrients found in soil that plants need. [1]
Model answer: Two mineral nutrients found in soil that plants need are sodium and potassium.

(b) Name two animals that use soil as their dwelling place. [1]
Model answer: Two animals that use soil as their dwelling place are rats and earthworms.

(c) Name one kind of microorganism found in soil. [1]
Model answer: Bacteria are one kind of microorganism found in soil.

4. (i) Define the term 'Microbes'. [1]
Model answer: Microbes (microorganisms) are organisms that are extremely small in size and can be observed only under a microscope.

(ii) Several changes take place in a flower after fertilisation.

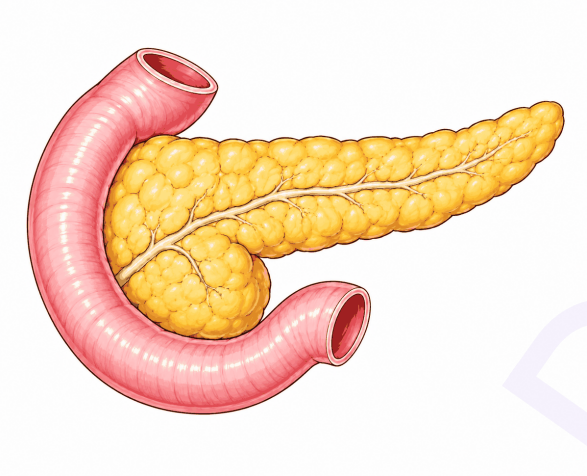
(a) What does the ovule develop into after fertilisation? [1]
Model answer: After fertilisation, the ovule develops into a seed.

(b) What happens to the petals and other floral parts after fertilisation? [1]
Model answer: After fertilisation, the petals, sepals and other floral parts fall off from the plant.

(iii) State any four steps to maintain a healthy environment that prevents the spread of communicable diseases. [2]
Model answer: Garbage should be kept in covered bins so that flies do not breed on them. Water should not be allowed to stagnate outside the house or in the neighbourhood. All drains should be covered to prevent the breeding of mosquitoes. Drinking water should not be allowed to be contaminated with faeces.

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(iv) Study the diagram and answer the questions that follow.



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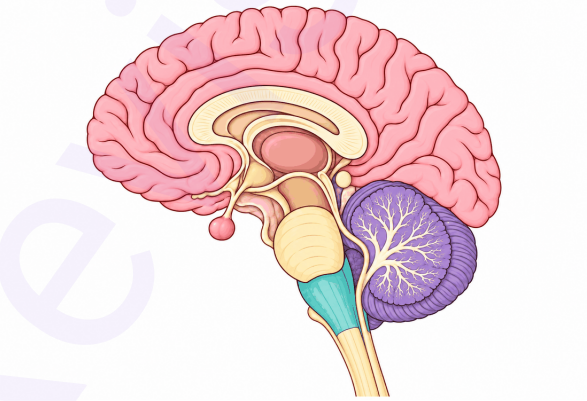
(a) Identify the gland shown in the diagram and name the cells in it that secrete hormones. [1]

Model answer: The gland is the pancreas, and the hormone-secreting cells in it are called the Islets of Langerhans.

(b) Name the two principal hormones secreted by these cells and state which one lowers blood sugar. [1]

Model answer: The two hormones are insulin and glucagon; insulin lowers the level of glucose in the blood.

(v) Study the image and answer the questions that follow.



Source: MyRevisionDeck | Internal

(a) Identify the largest part of the brain shown in the diagram and state its main function. [1]

Model answer: The largest part is the cerebrum, which is the seat of intelligence, consciousness and will power, and controls all voluntary activities.

(b) Identify the smaller part below the largest part of the brain and state its main function. [1]

Model answer: The smaller part below the cerebrum is the cerebellum, which balances the body and coordinates muscular activities.

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(c) Identify the lowest part of the brain in the diagram and state its main function. [1]
Model answer: The lowest part is the medulla oblongata, which controls vital internal activities like breathing, heart beating and peristalsis.

5. (i) What was agronomic technology in the context of the Green Revolution, and what were its effects on crop produce? [1]
Model answer: Agronomic technology was the development of new chemical fertilisers, synthetic herbicides and pesticides, and the use of the chemical fertilisers resulted in produce with extra nutrients and an increased yield.

(ii) After fertilisation the fertilised egg travels from the oviduct to the uterus, where it embeds in the uterine wall.

(a) What is the state of the fertilised egg by the time it reaches the uterus? [1]
Model answer: By the time it reaches the uterus a small ball of numerous cells has already formed.

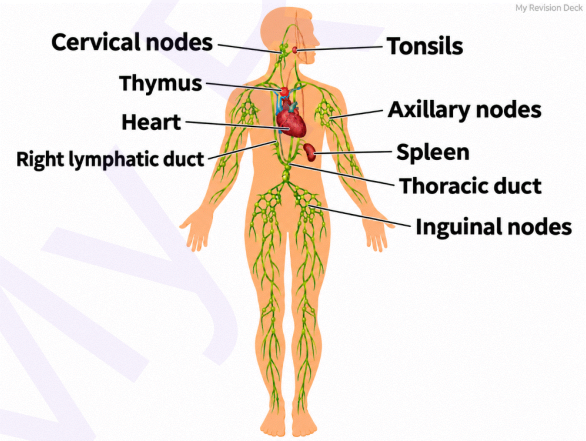
(b) What is the name of the process by which the embryo fixes itself in the uterine wall, and what state does it produce? [1]
Model answer: The natural way of fixing the embryo in the wall of the uterus is called implantation. It produces the state of pregnancy.

(iii) State any four harmful effects of drinking alcohol on the human body. [2]
Model answer: Alcohol may damage the nervous system. Excess alcohol causes damage to the liver. Alcohol drinking impairs judgement and reduces self-control. It also affects muscular coordination of the body, resulting in accidents.

Additional points a student may include: Alcohol may also damage the blood vessels, the kidneys and the stomach. Excess alcohol gets stored in the form of fat.

(iv) How does binary fission differ from multiple fission in the number of daughter cells formed? Give one example of an organism for each. [2]
Model answer: In binary fission, one parent cell divides to produce two daughter cells (e.g., bacteria). In multiple fission, one parent cell divides to produce more than two daughter cells (e.g., four in Chlorella or Chlamydomonas).

(v) Draw a neat labelled diagram showing the distribution of the main lymph vessels and lymphatic organs in the human body. [3]
Model answer: The diagram should show the human body outline with the cervical lymph nodes (neck), axillary lymph nodes (armpit), inguinal lymph nodes (groin), thymus, spleen, tonsils, the thoracic duct and the right lymphatic duct. Each structure should be labelled.



6. (i) Define the term 'Transpiration'. [1]

Model answer: Transpiration is the loss of water in the form of water vapour from the aerial parts of a plant.

(ii) Adolescence and puberty are two closely related terms.

(a) What is the meaning and origin of the term "adolescence"? [1]

Model answer: Adolescence is a transitional stage of physical and mental development between childhood and adulthood, derived from the Latin word adolescere meaning "to grow into maturity".

(b) What is puberty, and at what age does it usually start in girls and in boys? [1]

Model answer: Puberty is the period during which the reproductive systems of boys and girls mature; it starts at about 12 years of age in girls and at about 13 years of age in boys.

(iii) Differentiate between a food chain and a food web. [2]

Model answer: A food chain is the linear sequence of organisms in which each organism eats the lower member and is itself eaten by the next higher member. It has only one feeding pathway. A food web is a network of several interconnecting food chains in a community of organisms. It allows alternative feeding pathways and provides more stability to the ecosystem.

(iv) What is organic farming? What is its main aim? [2]

Model answer: Organic farming is the practice of raising crops without using synthetic fertilisers and pesticides. Farmers use organic manure that has been prepared scientifically from organic wastes of crops, animal and farm wastes and aquatic wastes. The main aim of organic farming is to enhance soil fertility, grow crops in an ecofriendly environment free from chemical pollution, and produce crops with high nutritional value.

(v) Each of the three forces that cause the ascent of sap originates from a different part of the plant or a different physical property.

(a) How is root pressure developed in a plant, and how does it help the ascent of sap? [1]

Model answer: Root pressure is developed in the root by the continuous inflow of water through cell-to-cell osmosis; it makes water enter the xylem vessels and pushes the plant sap upwards.

(b) What physical properties of water molecules give rise to capillary force? [1]

Model answer: Capillary force arises from the cohesion of water molecules — their tendency to stick to each other — and adhesion — their tendency to stick to the sides of the xylem vessels.

(c) In which tissue of the plant is transpirational pull created, and what kind of force is it? [1]

Model answer: Transpirational pull is created in the xylem vessels; it is a suction force, produced as a result of transpiration, that pulls water up from the roots to the stem and the leaves.

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