GREENLAWNS SCHOOL, WORLI

TERMINAL EXAMINATION: 2025-26

BIOLOGY

Std: X | Marks: 80

Date: 12/09/2025 | Time: 2 hrs

Answers to this paper must be written of the paper provided separately. You will **not** be allowed to write during the first **10** minutes. This time is to be spent in reading the Question paper. The time given at the head of this paper is the time allowed for writing the answers.

Section A is compulsory. Attempt any four questions from **Section B**.

SECTION A

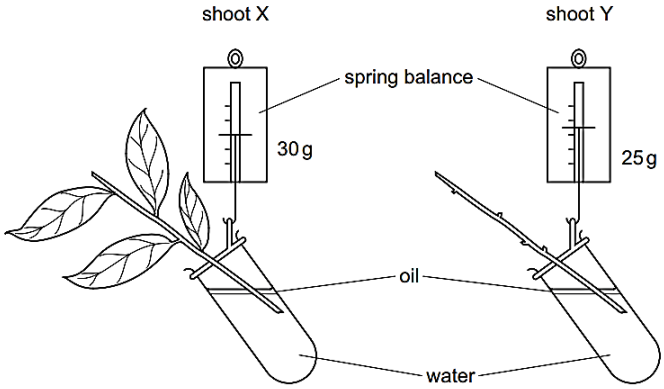
*(Attempt **all** questions from this section)*

Question 1

Choose the correct answers to the questions from the given options. [15]

(Do not copy the question, write the correct answer only.)

(i) The diagram shows two shoots at the start of an experiment on transpiration:

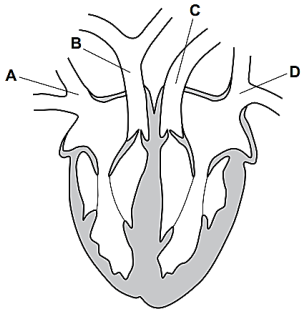


What are the likely readings on the spring balances after three days?

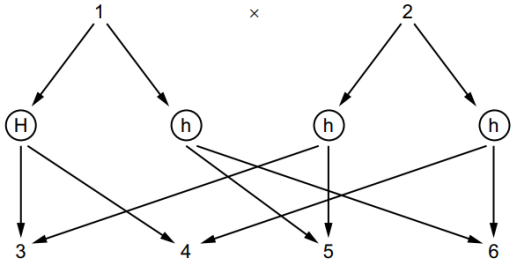
	Shoot X/g	Shoot Y/g
(a)	25	30
(b)	25	25
(c)	30	25
(d)	30	30

(ii) The diagram shows a section through a human heart. Which blood vessel is the pulmonary vein?

(a) A
(b) B
(c) C
(d) D



(iii) The genetic diagram shows a monohybrid cross. H is the dominant allele and h is the recessive allele.

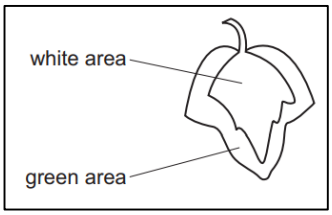


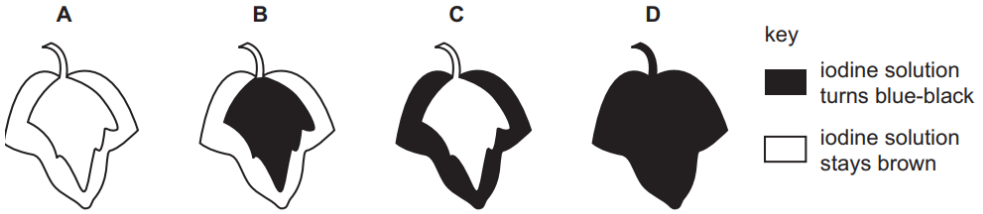
Which of the parents and offspring are heterozygous?

(a) 1, 3 and 4
(b) 1, 5 and 6
(c) 2, 3 and 4
(d) 2, 5 and 6

(iv) In a photosynthesis experiment, a plant leaf is left in bright sunlight for several hours. A leaf is then removed from the plant and tested for starch, using iodine solution.

Which diagram shows the result of the experiment?

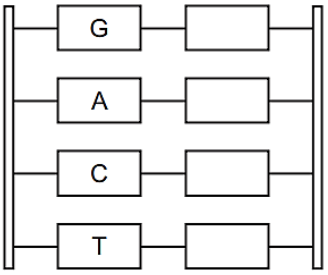




(a) A
(b) B
(c) C
(d) D

(v) The diagram shows a section of DNA, with four bases identified on one strand. What is the correct combination?

(a) AGTC
(b) CTGA
(c) GACT
(d) TCAG



(vi) A horticulturist wants to make an ornamental plant bushier. Which hormone can he apply to the plant to stimulate cell-division and cell enlargement?

(a) Auxins
(b) Gibberellins
(c) Cytokinins
(d) Ethylene

(vii) **Assertion**: Ultrafiltration in glomerulus is a process driven by high hydrostatic pressure.
Reason: Efferent arteriole has a wider diameter than afferent arteriole.

(a) A is True, and R is false
(b) A is False, and R is true
(c) Both A and R are true
(d) Both A and R are false

(viii) A Lab technician notices that a patient's urine is darker than usual. The pigment likely to be responsible for this increase in colour is:

(a) Melanin
(b) Haemoglobin
(c) Creatinine
(d) Urochrome

(ix) Arrange the following steps in the correct sequence as they occur during photosynthesis:

1. Photophosphorylation generates ATP
2. A photon excites chlorophyll molecules in the photosystem
3. Photolysis of water occurs, releasing hydrogen and hydroxyl ion
4. Glucose is synthesized during biosynthetic phase

(a) 4, 2, 3, 1
(b) 3, 2, 1, 4
(c) 2, 3, 1, 4
(d) 1, 3, 2, 4

(x) The compound formed by the combination of haemoglobin and carbon dioxide is:

(a) Carbogen
(b) Oxyhaemoglobin
(c) Carbaminohaemoglobin
(d) Carboxyhaemoglobin

(xi) Which is the best indicator to measure overcrowding in a city?

(a) Population density
(b) Natality
(c) Literacy rate
(d) Mortality

(xii) While studying the stages in the evolution of man, a well-developed chin is observed in:

(a) Cro-Magnon
(b) Neanderthal
(c) Homo erectus
(d) Homo habilis

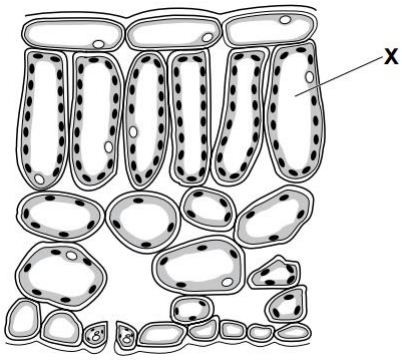
(xiii) **Assertion (A)**: Colour-blindness affects more males than females.
Reason (R): Since it is Y-linked disorder, it is commonly seen in males.

(a) A is True, and R is false
(b) A is False, and R is true
(c) Both A and R are true
(d) Both A and R are false

(xiv) A patient shows symptoms of skin pigmentation, loss of weight, nausea, hypoglycaemia, sensitivity to cold and pain and increases susceptibility to infections. What is this patient suffering from?

(a) Cretinism
(b) Myxoedema
(c) Addison's disease
(d) Cushing's syndrome

(xv) The diagram shows a cross-section of part of a leaf.
What is the name of the cell labelled X?



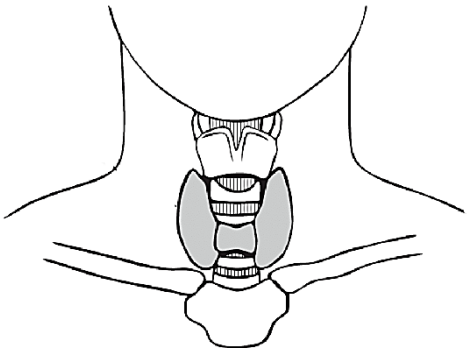
(a) Epidermal cell
(b) Palisade mesophyll cell
(c) Spongy mesophyll cell
(d) Guard cell

Question 2

(i) Give the biological / technical terms for the following: [5]

(a) Bulb-like structures which store chemicals at the distal ends of axon terminals.
(b) A surgical method of fertility control in human males.
(c) The condition in which the red blood cell count is abnormally high.
(d) The process of conversion of ADP to ATP during photosynthesis.
(e) Specific sequences of nucleotides on a chromosome.

(ii) Given below is the diagram of an endocrine gland. Read the information below the diagram and fill in the blanks: [5]



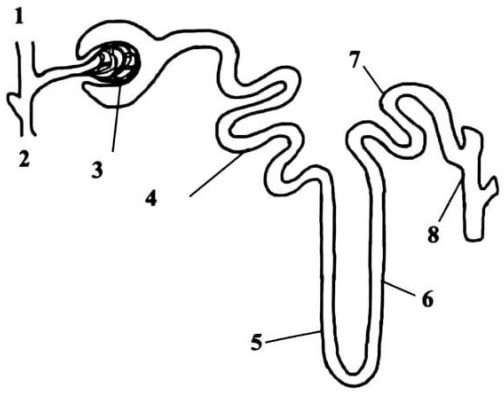
Endocrine glands are ductless glands that secrete hormones into the extracellular space around the cells. The secretions then pass into capillaries to be transported in the blood.

The (a) _____ is a bilobed structure situated in front of the neck just below the (b) _____. The two lobes are joined by a narrow (c) _____. This gland secretes the hormone (d) _____ whose undersecretion leads to (e) _____ disorder in children showing dwarfism and mental retardation.

(iii) Choose the odd term out from each of the following set of terms. Mention the category to which the remaining three belong: [5]

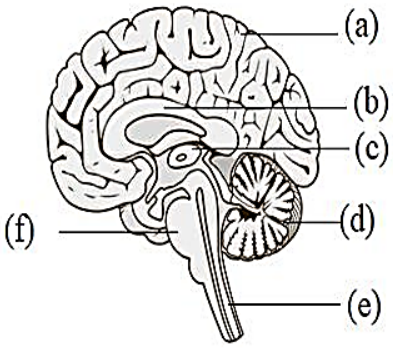
(a) TSH, NADP, ACTH, ADH
(b) Sneezing, Coughing, Blinking, Typing
(c) Typhoid, Haemophilia, Albinism, Colour blindness
(d) Phosphate, RNA, Pentose, Nitrogenous base
(e) Abscisic acid, Auxins, Adrenaline, Cytokinins

(iv) Shaina accompanied her father to an Urologist for his check-up. She noticed a poster in the clinic with questions related to the parts of a nephron. Help Shaina answer the questions by giving correct numbers to the questions asked: [5]



(a) Where does ultrafiltration takes place?
(b) Blood vessel that enters into the Bowman's capsule.
(c) Where is most water absorbed into the blood stream?
(d) Part which carries out tubular secretion.
(e) Structure which contains urine.

(v) Study the diagram given below and match the structure with its function: [5]
Example – (f) – 6. Carries impulses from one hemisphere of the cerebellum to the other

Cross Section of Human Ear	Functions
	1. Relays pain and pressure impulses to cerebrum
	2. Coordinates muscular activity and maintains body balance
	3. Controls involuntary activities
	4. Transfer information from one cerebral hemisphere to the other
	5. Seat of intelligence and will power
	6. Carries impulses from one hemisphere of the cerebellum to the other

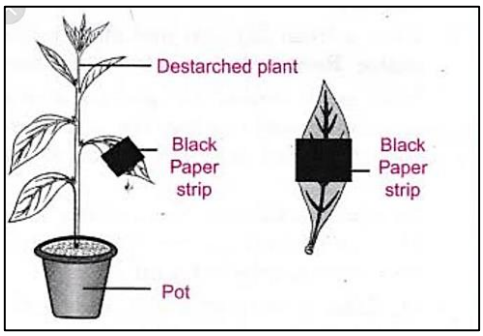
SECTION B

*(Attempt **any four** questions from this Section.)*

Question 3

(i) Give the difference between mitosis and meiosis with reference to: [2]
(a) Number of daughter cells formed at the end of the division.
(b) The chromosome number of the daughter cells formed

(ii) A group of students is conducting an experiment to investigate how different factors affect the rate of photosynthesis in a plant. [4]



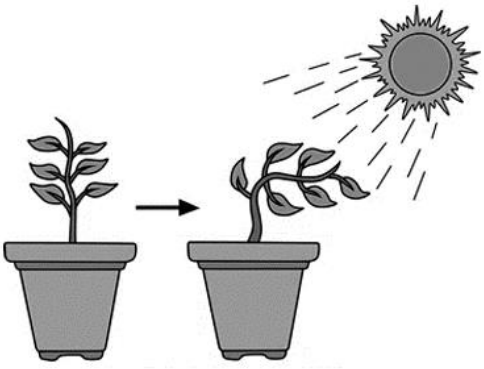
(a) Identify the factor being investigated.
(b) Why was the plant kept in dark room before conducting this experiment?
(c) Why was the leaf boiled in methylated spirit?
(d) After the starch test, what will be observed in the experimental leaf?

(iii) Explain why – A semi ripe banana was kept near two oranges. The next morning it was noticed that the banana was overripe. [1]

(iv) Draw a neat and labelled diagram of a cross section of the blood vessel that transports blood towards the heart. [3]

Question 4

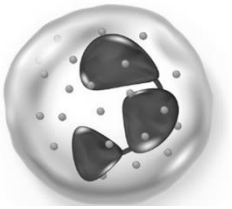
(i) Plants exhibit the ability to grow towards light, a process that helps them optimise photosynthesis. This movement is not random but is controlled by a specific biological mechanism that involves the distribution of plant hormones. [2]



(a) Define the phenomenon demonstrated in the picture.
(b) How does the hormone auxin contribute to this process?

(ii) Identify and give functions of the WBCs shown in the diagrams below: [2]

A



B

(iii) Give two points of difference between the theories of Lamarck and Darwin. [2]

(iv) Mention the location and function of Chordae tendinae. [1]

(v) A homozygous pea plant having green pods (G) and axial flowers (A) is crossed with another homozygous plant having yellow pods (g) and terminal flower (a). [3]

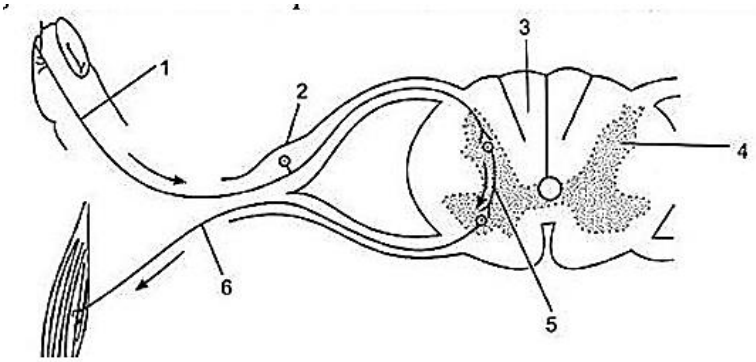
(a) Give the phenotype and genotype of the F_1 generation.

(b) Name the two characters that are studied in this experiment.

(c) Give the possible combination of gametes that can be obtained from the F_1 hybrid.

Question 5

(i) The diagram given below is a representation of a certain phenomenon to the nervous system. Study the diagram and answer the questions that follow: [5]



(a) Name the phenomenon that is being depicted.

(b) Name the parts 1, 2, 3 and 4.

(c) Write the functions of parts 5 and 6.

(ii) The figure below depicts the skull structure of a stage of human evolution. [2]

(a) Name the stage of man depicted from this skull structure?

(b) What is this type of face called?

(iii) Draw a diagram of the nucleus of a cell, having chromosome number 6, as it would appear in the metaphase stage of mitosis and label the following parts: [3]

(a) Aster (b) Spindle fibres (c) Chromatid (d) Centromere

Question 6

(i) Given below is an organism camouflaged by its background: [2]

(a) What is the scientific name of this organism?

(b) Define the term speciation with regard to this organism.

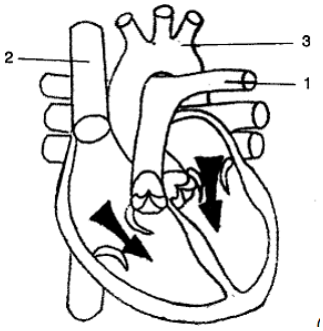
(ii) The image below shows two individuals of different heights. Study the same and answer the questions that follow: [5]

(a) What is the location of the endocrine gland that causes this condition?
(b) Name a hormone of this gland which plays a crucial role in sexual development and reproduction.
(c) What is Acromegaly?
(d) Define Tropic hormones.
(e) Give the full form of ACTH

(iii) State one function of each: [3]
(a) Oxytocin (b) Thrombocytes (c) Pericardium

Question 7

(i) The diagram given below represents the human heart in one phase of its functional activities. Study the same and answer the questions that follow: [4]



(a) Name the phase.
(b) Label the parts 1, 2 and 3.
(c) Which part of the heart is contracting in this phase? Give a reason to support your answer.
(d) What causes the heart sounds 'LUBB' and 'DUP'?

(ii) In 2025, India overtook China as the world's most populous country and now has almost 1.46 billion people. China now has the second largest population in the world. [3]
(a) Mention two factors responsible for population explosion in India.
(b) Suggest one way to control population growth.
(c) Define demography.

(iii) Give reasons for the following: [3]
(a) Forests tend to bring more rain.
(b) Erythrocytes lack endoplasmic reticulum.
(c) Medulla of kidneys show a striped appearance.

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