

**ICSE Board
Class X Biology
Sample Paper - 9**

Time: 2 hrs**Total Marks: 80****General Instructions:**

1. Answers to this paper must be written on the paper provided separately.
2. You will **not** be allowed to write during the first **15** minutes.
This time is to be spent in reading the question paper.
3. The time given at the head of the paper is the time allotted for writing the answers.
4. Attempt **all** questions from **Section I** and **any four** questions from **Section II**.
5. The intended marks for questions or parts of questions are given in brackets [].

SECTION-I (40 Marks)

*Attempt **all** questions from this section.*

Question 1**(a)** Name the following:

- (i) The blood vessel which carries oxygenated blood to the liver.
- (ii) The excretory product released through the lungs.
- (iii) The reaction by which water molecules are broken down using light energy.
- (iv) A solution whose concentration is equal to the concentration of cell sap.
- (v) The hollow, pear-shaped muscular organ where the embryo develops. [5]

(b) State whether the following statements are true or false. If false rewrite the correct form of the statement by changing the first word only:

- (i) A convex lens is used for correcting myopia.
- (ii) Deficiency of iodine causes simple goitre.
- (iii) Placenta produces certain hormones.
- (iv) Lenticular transpiration occurs in herbs.
- (v) Cerebrum is the seat of memory, speech, reasoning etc. [5]

(c) Give technical terms for the following:

- (i) The filtered blood plasma.
- (ii) The movement of water molecules across the cell membrane from a hypertonic to a hypotonic solution.
- (iii) The shortest phase of mitosis.
- (iv) A condition in which both the alleles are identical.
- (v) Non-identical twins produced by the fertilisation of two eggs. [5]

- (d)** Given below are five sets with four terms each. In each set one term is odd. Choose the odd one out from the following terms and name the category to which the other three belong: [5]

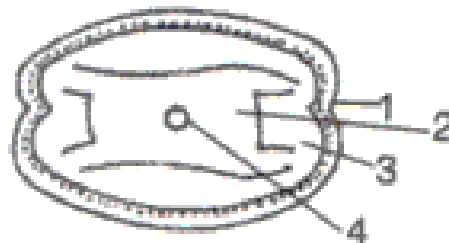
SET	ODD TERM	CATEGORY
i. Pons, Cerebrum, Cerebellum, Cochlea		
ii. Tympanum, Macula, Cochlea, Utriculus		
iii. Thyroid, Thyroxine, Pancreas, Adrenal gland		
iv. Receptor, Sensory nerve, Cerebellum, Effector organ		
v. Leptotene, Metaphase, Anaphase, Telophase		

- (e)** State the location and function of the following:

- (i) Cerebellum
- (ii) Cochlea
- (iii) Ear ossicles
- (iv) Yellow spot
- (v) Eustachian tube

[5]

- (f)** The given figure represents a diagrammatic sketch of the internal structure of the spinal cord.



- (i) Label the parts 1 – 4.
- (ii) State the difference in the arrangement of neurons in the brain and the spinal cord.

[5]

(g) Complete the following pairs to represent the relationship between the structure and the special functional activity.

- (i) Testis and _____.
- (ii) _____ and transfer of impulses from the human eye to the brain.
- (iii) Palisade cells of the leaf and _____.
- (iv) _____ and translocation of the food.
- (v) _____ and site of fertilisation in the human female. [5]

(h) Name the structure and their location:

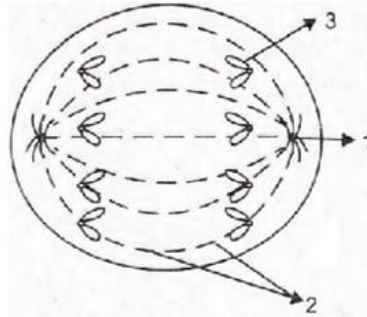
- (i) The gland which secretes thyroxine.
- (ii) The site of sharpest vision.
- (iii) The structure through which guttation occurs.
- (iv) The photoreceptor cells which are sensitive to colour.
- (v) The chemical which helps in the transmission of impulses. [5]

Section II [40 Marks]

Attempt any **four** questions from this section

Question 2

(a) The diagram given below represents a stage during mitotic cell division in an animal cell.



- (i) Identify the stage. Give reasons to support your answer.
- (ii) Name the parts labelled 1, 2 and 3.
- (iii) What is the chromosome number of the cell?
- (iv) Draw a neat, labelled diagram of the cell as it would appear in the next stage. Name the stage. [5]

(b) Name the hormones which cause the following conditions:

- (i) Diabetes mellitus
- (ii) Growth of beards in women
- (iii) Myxoedema
- (iv) Gigantism
- (v) Exophthalmic goitre [5]

Question 3

(a) State the difference between the following on the basis of what is given in the brackets:

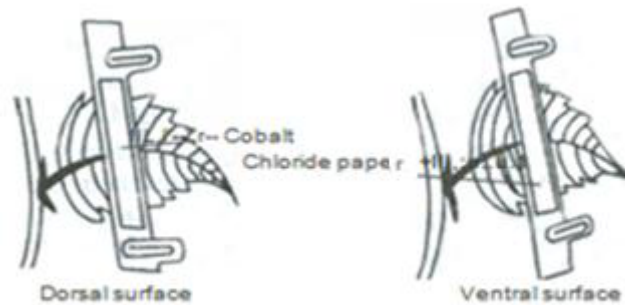
- (i) Myopia and hypermetropia. (cause of the defect)
- (ii) Cerebrum and spinal cord. (arrangement of the cytons and axons of the neuron)
- (iii) Genotype and phenotype. (definition)
- (iv) Karyokinesis and cytokinesis. (explain the term)
- (v) Light reaction and dark reaction. (site of occurrence) [5]

(b) Account for the following:

- (i) Wilted lettuce leaves become crisp or firm when placed in cold water for a while.
- (ii) One feels blinded for a short time after coming out of a dark room.
- (iii) The leaves of certain plants roll up on a bright sunny day.
- (iv) An alcoholic person walks unsteadily when drunk.
- (v) Sleeping under a tree at night is not advisable. [5]

Question 4

- (a) Given below is an experimental set-up to demonstrate a particular process in plants. Study the same and answer the questions that follow:



- (i) Name the physiological process being studied.
 - (ii) Explain the process mentioned above.
 - (iii) What is the aim of the above experiment?
 - (iv) What would you observe in the experimental set-up after an hour? Give reasons to support your answer.
 - (v) Mention any three adaptations of plants to overcome the physiological process mentioned in (i) above. [5]
- (b) Complete the following table by filling in the blanks numbered 1 to 10: [5]

No.	Glands	Hormones	Functions	Diseases
(i)	Pituitary	9	1	Gigantism (hypersecretion) Dwarfism (hyposecretion)
(ii)	2	Thyroxine	3	Cretinism, Exophthalmic goitre
(iii)	Pancreas	4	Glucose to glycogen	10
(iv)	Adrenal	5	Control of carbohydrate and protein metabolism	8
(v)	Adrenal	6	7	Cushing's syndrome (hypersecretion)

Question 5**(a)**

- (i) Draw a diagram of a single Malpighian corpuscle and label the following parts:
Glomerulus, Bowman's capsule, Afferent arteriole and Efferent arteriole.
- (ii) Name and explain the process that occurs in the glomerulus. [5]

(b) Give the biological/technical terms for the following:

- (i) The protective membranous coverings of the brain.
- (ii) The part of the retina without sensitive cells.
- (iii) The development of fruits without fertilisation.
- (iv) The loss of water in the form of water droplets.
- (v) The process of giving birth to a baby.
- (vi) The hormones in plants.
- (vii) The cells in the testes which produce the sex hormone called testosterone.
- (viii) The site of the dark reaction in the chloroplast.
- (ix) A stable compound of haemoglobin and carbon monoxide.
- (x) The part of the ear which changes sound waves into nerve impulses. [5]

Question 6**(a)**

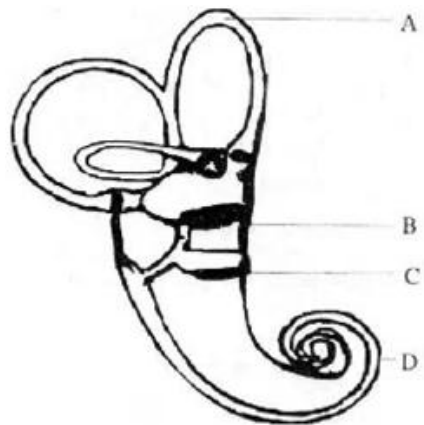
(i) Explain the following terms:

1. Monohybrid cross
2. Gene
3. Phenotype

(ii) Name two sex-linked diseases in males.

(iii) State Mendel's law of segregation.

[5]

(b) The diagram given below represents a structure found in the inner ear. Study the same and then answer the questions that follow:

(i) Name the parts labelled A, B, C, and D.

(ii) Name the part of the ear responsible for transmitting impulses to the brain.

(iii) Name the part labelled above which is responsible for:

1. Static equilibrium.
2. Dynamic equilibrium.
3. Hearing

(iv) Name the audio receptor cells which pick up vibrations.

(v) Name the fluid present in the inner ear.

[5]

Question 7

(a)

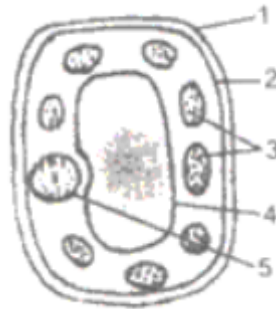
(i) In the diagram given below, the roots and the stem show which type of movement?



(ii) How is Neo-Darwinism different from the theory of Natural Selection?

(iii) State any two differences between Lamarck's theory and Darwin's theory of evolution. [5]

(b) The given figure shows a cell kept in a certain solution. Study it and answer the questions that follow:



(i) Name the solution in which the cell is kept.

(ii) Name the condition of the cell.

(iii) Label the parts 1 – 5.

(iv) State the significance of this condition in plants (any 2 points). [5]