

Lilavatibai Podar High School-ISC
Preliminary Examination [2018-19]

Std-X

Subject- Biology

Marks -80

Duration - 2hrs.

Answers to this paper must be written on the paper provided separately

You will not be allowed to write during the first 15 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

Attempt all questions from Section I and any four questions from Section II
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: [5]
- (i) The part of the brain where the respiratory centre is located.
- (ii) The reaction which leads to splitting of water in the presence of light.
- (iii) Largest sized leucocytes with kidney shaped nucleus.
- (iv) The type of cell division that takes place in the anthers of the flowering plants to produce pollen grains.
- (v) The condition of a cell when placed in a hypotonic solution.
- (b) Choose the correct alternative from the choices given below each statement so as to complete its meaning: [5]
- (i) Carbon dioxide is necessary for photosynthesis. The chemical used to remove this gas most effectively from entering a control apparatus.
- (a) distilled water
- (b) calcium oxide
- (c) potassium hydroxide
- (d) sodium carbonate
- (ii) Plasmolysis in a cell occurs when it is placed in
- (a) isotonic solution
- (b) hypotonic solution
- (c) hypertonic solution
- (d) none of these
- (iii) The outer layer of the human eyeball includes the
- (a) lens and choroid
- (b) Retina
- (c) Sclera and cornea
- (d) none of these
- (iv) Hepatic portal system connects
- (a) Digestive system to liver
- (b) kidneys to liver
- (c) Liver to digestive system
- (d) Liver to kidneys

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This paper consists of 6 printed sides.

Page..1

- (v) Major part of the plasma consists of
- (a) blood cells
- (b) Inorganic substances
- (c) Organic substances
- (d) Water

(c) Complete the following paragraph by filling in the blanks (i) to (v) with appropriate words: [5]

The non-dividing preparatory phase of the cell cycle during which a cell grows to its maximum size is called as (i) _____. This phase begins with the first phase during which the volume of cytoplasm increases and is called as (ii) _____ phase. This is followed by the next phase known as 'S' phase during which the DNA undergoes (iii) _____. The last phase is characterized by the final growth and proteins synthesis for formation of (iv) _____ fibres during mitosis. The next phase of the cell cycle leads to the formation of two new daughter cells and is called as (v) _____.

(d) Give the exact location of each of the following structures: [5]

- (i) Eustachian tube
- (ii) Guard cells
- (iii) Seminiferous tubules
- (iv) Pituitary gland.
- (v) Corpus callosum

(e) Given below are five sets of terms. In each case, arrange and rewrite each set so as to be in logical sequence: [5]

- (i) Implantation, parturition, ovulation, gestation, fertilization.
- (ii) Oval window, tympanum, cochlea, auditory canal, ear ossicles.
- (iii) Dark reaction, activation of chlorophyll, photophosphorylation, sunlight, reduction of NADP.
- (iv) Homo sapiens, Cro-magnon man, Homo habilis, homo erectus, Australopithecus.
- (v) Auricular systole, dupp, lubb, ventricular systole, joint diastole.

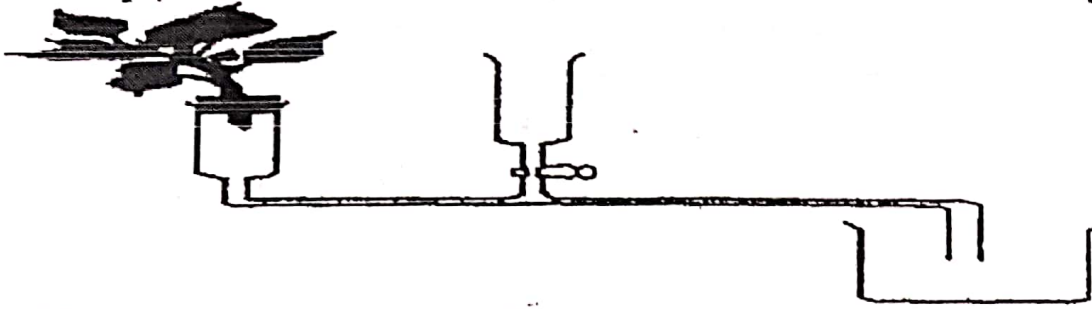
(f) Given below are five sets with four terms each. In each set one term is odd.

Choose the odd one out of the following terms and name the category to which the others belong: [5]

- (i) Haemoglobin, prothrombin, fibrinogen, fibrin, thrombokinase.
- (ii) Vagina, vulva, epididymis, ovaries, oviduct.
- (iii) Detergents, sewage, x-rays, oil-spills, industrial effluents.
- (iv) Phototropism, geotropism, thigmotropism, chemotropism, photons.
- (v) Cretinism, exophthalmic goitre, myxoedema, simple goiter, Cushing's syndrome.

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(g) Given below is the diagram of a device used in plant physiology. Study the diagram and answer the questions that follow: [5]



- (i) Name the apparatus seen in the figure above.
- (ii) What is the aim of the above experimental setup?
- (iii) What will happen to the water level in the trough? Give a suitable reason.
- (iv) State any two limitations of the device seen in the figure.

(h) Match the items of the column A with those in column B and rewrite the correct matching pairs: [5]

Column 'A'	'Column-B'
(i) Glomerulus	Carries impulses away from brain and spinal chord
(ii) Used syringes	place for dark reactions of photosynthesis —
(iii) Stroma	Biomedical waste —
(iv) ACTH	twisted mass of blood capillaries in the nephron —
(v) Motor nerve	Stimulates hormones of adrenal cortex

SECTION - II (40 MARKS)

(Attempt any four questions from this section)

Question 2 (a)



Study the above diagram of the heart and answer the questions below: [5]

- (i) Label the parts 1, 2, 3 and 4
- (ii) Name the two cuspid valves.
- (iii) Distinguish between lubb and dupp [definition]
- (iv) Name the main blood vessels entering the heart.

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(b) Give one difference between the following pairs on the basis of what is given in the brackets: [5]

- (i) Auxins and Cytokinins [one significant function]
- (ii) Anaphase and Telophase [one distinguishing feature of each stage]
- (iii) Diffusion and Osmosis [definition]
- (iv) Thalamus and Hypothalamus [one function]
- (v) Pulse and Blood Pressure [meaning of the terms]

Question 3

- (a) The leaves of a well watered plant were found wilted during a hot sunny day. [5]
- (i) Suggest two reasons which could have caused the wilting of the leaves.
 - (ii) Would the cells of the leaves in the wilted state be flaccid or turgid?
 - (iii) Explain the meaning of the term mentioned above in your answer to (ii).
 - (iv) What explanation would you suggest if the wilted leaves did not recover during the night?

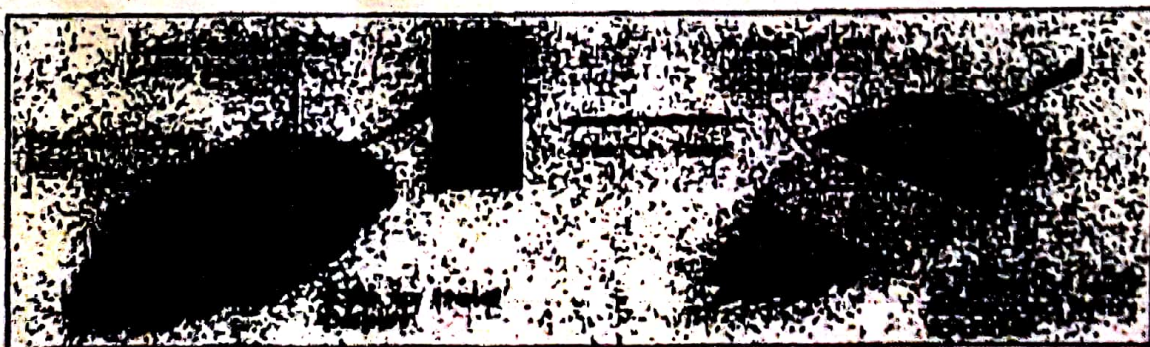
(b) Mention the exact function of the following structures:

- (i) Iris (ii) Epididymis (iii) Loop of Henle (iv) Centriole (v) Stomata

Question 4

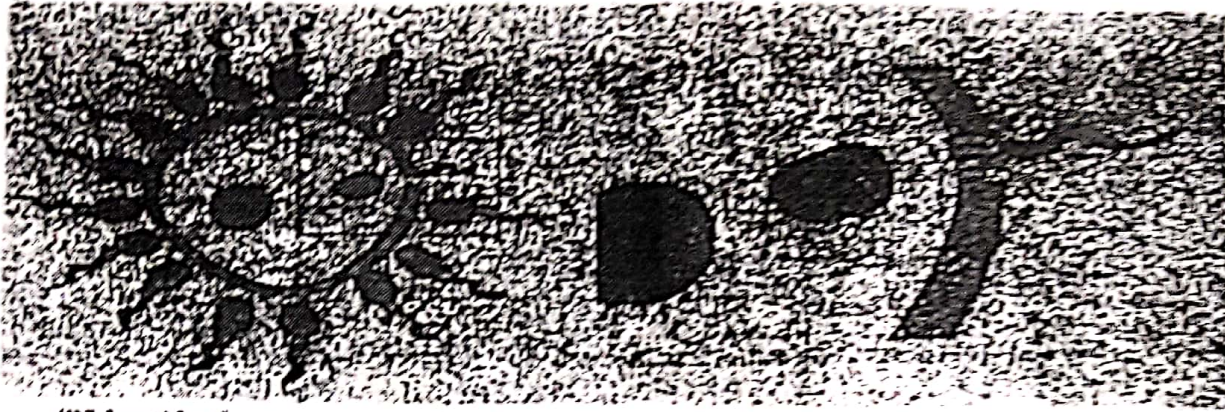
- (a) Give the biological/ technical term for the following: [5]
- (i) A fluid surrounding the developing embryo.
 - (ii) The permanent and surgical method of sterilization in the human female.
 - (iii) The repeating units of each DNA strand.
 - (iv) The upward movement of water and minerals from roots to leaves and other parts of the plants.
 - (v) The tropic movements in plants seen in response to the stimulus of the light.
 - (vi) The phenomenon which increased the population of light coloured moths before industrial revolution.
 - (vii) The gaseous plant hormone which initiates the ripening of fruits.
 - (viii) The name of the national campaign started by the government for a clean India.
 - (ix) The eye defect in which some parts of the object is seen in focus while others are blurred.
 - (x) The standard norms used in India for controlling vehicular pollution.

(b) The picture given below demonstrates the necessity of a factor during photosynthesis. Write a suitable aim, observation and a meaningful conclusion to the experimental setup in the picture given below: [5]



Question 5

(a) The diagram below represents two reproductive cells. Study the same and answer the questions that follow: [5]



(i) Identify the two reproductive cells seen in the figure above.

(ii) Name the specific parts of the reproductive system where the above cells are produced.

(iii) Where in the female reproductive system do these cells unite?

(iv) State any two functions of placenta.

(v) Name the two main pituitary hormones which control the menstrual cycle.

(b) Briefly explain the following terms: [5]

(i) Guttation

(ii) Population density

(iii) Greenhouse effect

(iv) Feedback mechanism of hormones

(v) Accommodation of eye.

Question 6

(a) A genetic disease is caused by a recessive allele (r), the normal condition (R) is dominant. The mother is a carrier for the disease while the father has normal alleles. Based on this information answer the following questions: [5]

i. Show the possible children born to the parents [genotype].

ii. Will any of their children suffer from this genetic condition? Why?

iii. What do you mean by the term 'sex-linked inheritance'?

(b) Give scientific reasons for the following: [5]

(i) Bacteria and fungi do not grow in pickles and jams.

(ii) The brain is normally free from shock.

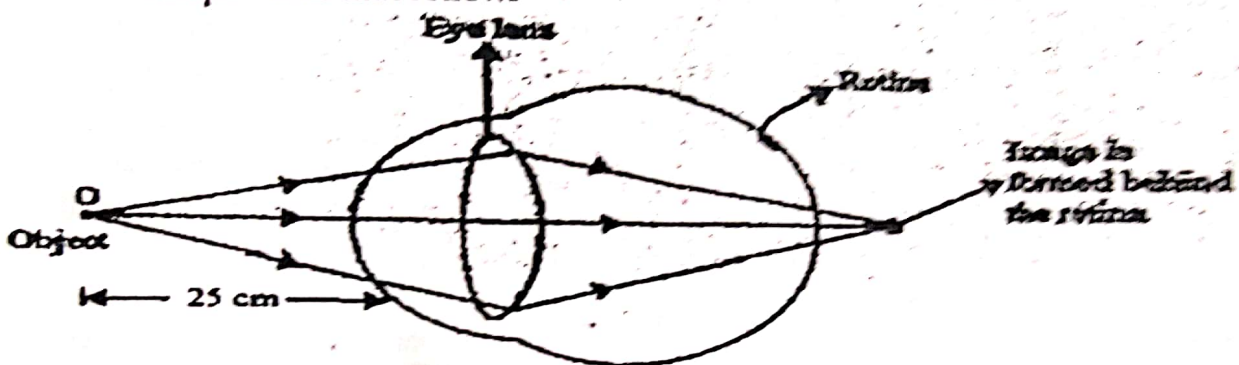
(iii) Wisdom teeth are considered to be vestigial organs in Humans.

(iv) Glucose is normally not found in Urine.

(v) A ban on the use of plastic is an effective measure to control pollution.

Question 7

(a) Given below is a diagram depicting a defect of the human eye. Study the same and answer the questions that follow: [5]



- (i) Name the defect of the eye shown in the figure above.
- (ii) Name the lens used to correct this defect.
- (iii) Give two possible reasons for this eye defect.
- (iv) Draw a neat and labeled diagram to show how the defect can be rectified.

(b) Answer the following questions briefly: [5]

- (i) State two effective measures to control vehicular pollution.
- (ii) State two features of the Neanderthal Man
- (iii) Name the three laws of Mendel.
- (iv) Explain hydrotropism with a suitable example.
- (v) Draw a neat and labeled diagram of a root hair cell with any two correct labels.