

THE SCHOLAR HIGH SCHOOL  
PRELIMINARY EXAMINATION

JANUARY 2019

MARKS : 80

STD : X

SUBJECT : BIOLOGY

TIME : 2 HOURS

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*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.*

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*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 ( ).*

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SECTION I ( 40 MARKS )

Attempt all questions from this Section

Question 1

(a) Name the following : (5)

- (i) The gas that helps in building up of carbohydrates in plants.
- (ii) Condition of a cell when placed in hypotonic solution.
- (iii) The duct which transports urine from kidney to the urinary bladder.
- (iv) Openings on the stem through which transpiration occurs.
- (v) The junction between two nerve cells.

(b) Given below are certain biological terms. Write a single (collective)

term for the following : (5)

- (i) Gibberellin, Cytokinin, Auxin.
- (ii) Condom , Copper-T, Diaphragm.
- (iii) Phenyl mercuric acetate, Silicone oil, Abscisic acid.

(iv) Acidophils, Basophils, Neutrophils.

(v) Albumins, Globulins, Fibrinogen.

(c) Choose the correct answer of the following :

(5)

(i) Cerebellum is a part of the brain which is responsible for :

- (a) Interperating sensations.
- (b) Controlling reflexes in the body.
- (c) Maintaining posture and equilibrium.
- (d) Controlling thinking , memory and reasoning.

(ii) Ozone is abundant in this layer. ozone heats this layer this layer as it absorbs energy from incoming ultraviolet radiation from the sun. The layer is:

- (a) Thermosphere
- (b) Troposphere
- (c) Mesosphere
- (d) Stratosphere

(iii) The parts of the human ear concerned with hearing are :

- (a) Cochlea, ear ossicles and tympanum.
- (b) Semicircular canals, utriculus and sacculus.
- (c) Eustachian tube, tympanum and utriculus.
- (d) Perilymph, ear ossicles and semicircular canals.

(iv) Ultrafiltration occurs in :

- (a) Bowman's capsule.
- (b) Proximal convoluted tubule.
- (c) Loop of Henle.
- (d) Distal convoluted tubule.

(v) The function of WBCs is :

- (a) To distribute heat.
- (b) To protect enzyme.

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(c) To cause blood clotting.

(d) To destroy bacteria.

(d) State the location and one function of each of the following : (5)

(i) Organ of corti.

(ii) Bundle of His.

(iii) Prostate gland.

(iv) Sebaceous gland.

(v) Corpus luteum.

(e) Define the following terms :

(i) Mutation.

(ii) Turgor pressure.

(iii) Placenta.

(iv) Tubular reabsorption.

(v) Guttation.

(f) Give reason : (5)

(i) You can keep green leafy vegetables fresher and greener for a longer duration of time using cytokinins.

(ii) Bacteria and fungi do not grow in pickles, jams, jellies and squashes, etc.

(iii) The urine is slightly thicker in summer than in winter.

(iv) The acrosome of sperm secretes an enzyme called hyaluronidase at the time of fertilization.

(v) Natural selection explains the evolution of giraffes.

(g) Given below are six sets with four terms each. In each set one term is odd and cannot be grouped in the same category to which the other three belong. Identify the odd one in each set and name the category to which the remaining three belong. (5)

(i) Haemoglobin, glucagon, iodopsin, rhodopsin.

(ii) Carbon monoxide, ozone, carbon dioxide, methane.

(iii) Transpiration, photosynthesis, phagocytosis, guttation.

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(iv) Cyton, photon, axon, dendron.

(v) Oxytocin, insulin, prolactin, progesterone.

(h) State whether the following statements are true or false. If false, rewrite the correct statement by changing the first or last word only : (5)

(i) Ribosomes are made of RNA and proteins.

(ii) The unit of light absorbed by the chlorophyll during photosynthesis is the proton.

(iii) Cornea is covered by a structure called sclerotic.

(iv) The presence of high concentration of auxin promotes root growth.

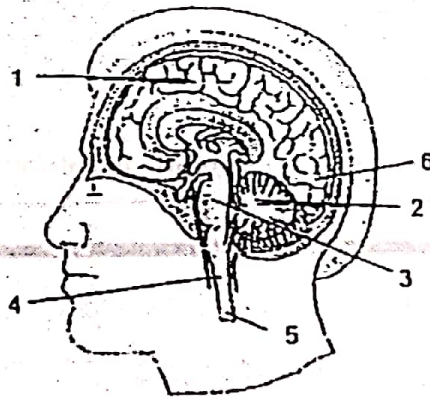
(v) Humans and great apes of africa i.e., chimpanzees and gorillas, share a common ancestor.

## SECTION II (40 MARKS)

Attempt any four question from this Section

### Question 2

(a) Given diagram is the sagittal section of human brain. Observe it carefully and answer the following questions : (5)



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(i) Why are there elevation and depression in the brain?

(ii) Label the guidelines 1-6.

(iii) Which parts of the above diagram are responsible for

(1) Vision.

(2) Involuntary action.

(3) Balancing the body.

(iv) Name the tissue which connects two cerebral hemisphere.

(b) (i) Write the name of the pigments present in : (2)

(1) Urine.

(2) Cones of eye.

(3) Blood.

(4) Leaves.

(ii) Write these phases of menstrual cycle in a proper sequence : (1)

Follicular phase, Luteal Phase, Menstrual phase, Ovulatory phase.

(iii) If you are planning an experiment to show the effect of light on photosynthesis: (2)

(1) Which light will you select- Green light or White light? Give a reason.

(2) Why would you select a destarched plant for the experiment on photosynthesis?

### Question 3

(a) Study the pedigree given below and answer the following : (5)

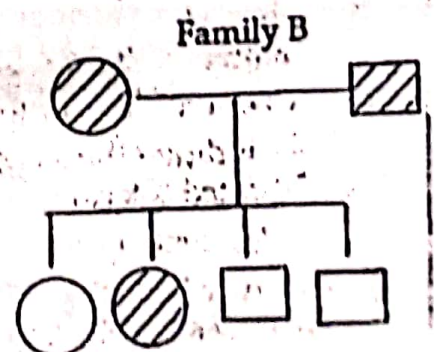
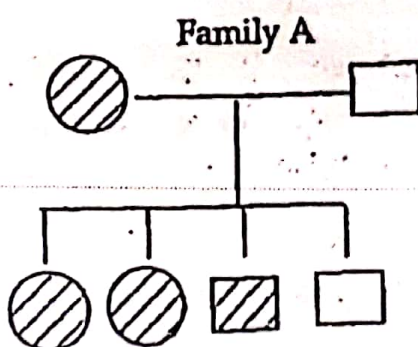
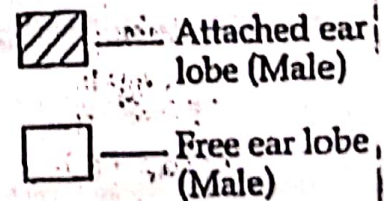
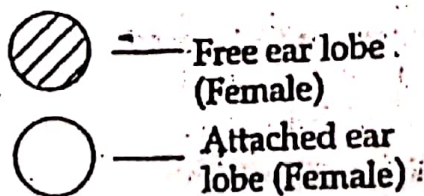
(i) Which character is dominant?

(ii) Which character is recessive?

(iii) How many generations have been represented?

(iv) What do striped circles or squares represent?

(v) What do unstriped circles or squares represent?



(b) Give scientific terms for the following :

(5)

(i) The process by which man selects traits useful to him for improving the qualities of domesticated plants and animals.

(ii) Origin of new species from the existing ones.

(iii) The ear ossicle which is attached to the tympanum.

(iv) The period marked with evolution of man into modern man.

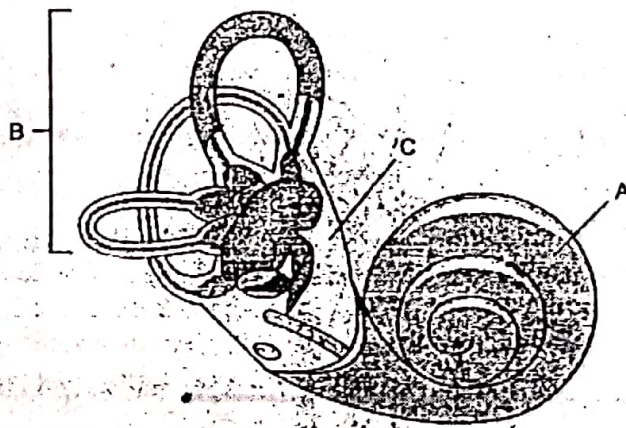
(v) The process by which information in DNA get changed.

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Question 4

(a) Given below is the diagram of a part of the human ear. Study the same and then answer the questions that follows :

(5)



(i) Give the biological term for malleus, Incus and Stapes.

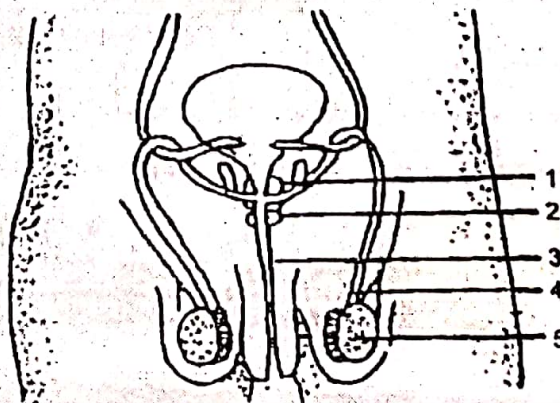
(ii) Name the parts labelled A, B and C in the diagram.

(iii) State the functions of the parts labelled 'A' and 'B'.

(iv) Name the audio receptor region present in the part labelled 'A'.

(b) Given below is the outline of the male reproductive system :

(5)



(i) Name the parts labelled 1 to 5.

(ii) State the functions of the parts labelled 1 and 4.

(iii) Name the cells of part 5 that produce testosterone.

(iv) Why is the structure 5 present outside the body in the scrotal sacs?

(v) What is semen?

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Question 5

(a) With respect to human eye, explain :

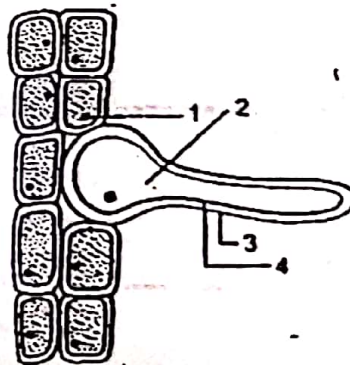
(i) How is the image formed on the retina?

(ii) How is the amount of light entering the eye controlled?

(iii) What type of lens is used for the correction of 'Long sight' defect?

(iv) With the help of a ray diagram show the defect of the eye and then its correction after use of lens.

(b) The alongside figure shows a root hair :



(i) Label the parts 1 to 4.

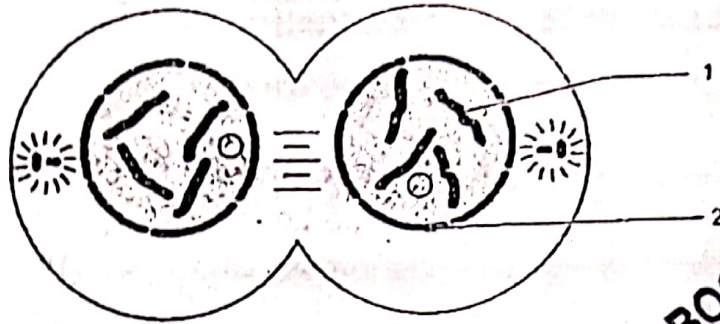
(ii) What is the role part 4?

(iii) Why is the root hair one-celled?

(iv) What will happen to the root hair if some fertilizer is added to the soil near the root hair?

Question 6

(a) Study the diagram given below which represents a stage during the mitotic cell division and answer questions that follow : (5)



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(i) Identify the stage giving suitable reasons.

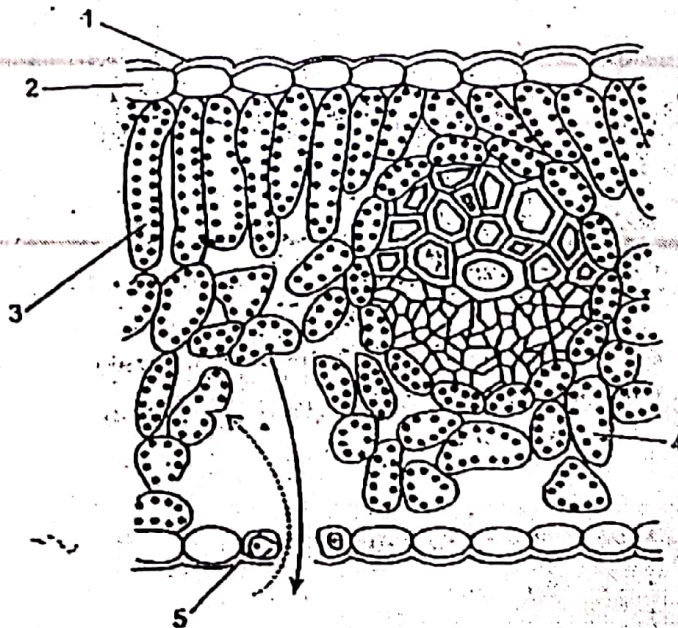
(ii) Name the parts numbered 1 and 2.

(iii) What is the technical term for the division of nucleus?

(iv) Mention the stage that comes before the stage shown in the diagram. Draw a neat labelled diagram of the stage mentioned.

(v) Which is the cell division that results in half the number of chromosomes in daughter cells?

(b) The figure below represents the vertical section of a leaf : (5)



(i) Name the parts labelled 1 to 5.

(ii) What do the two arrows indicated in the day time and at night?

(iii) Could you add one more arrow in the figure? if yes, what for?

(iv) How many leaf veins have been shown in this section?



Question 7

(a) Given below is a portion of the human body showing some important structure in ventral (front) view :

(5)



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(i) Where is this portion located in the body?

(ii) Name the structures numbered 1-3.

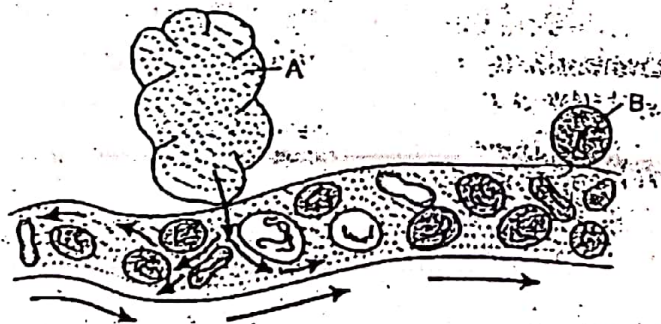
(iii) State one main function of each of the structures named above.

(iv) Is there any duct or tube to carry the secretions of the structure numbered 2?

If so, give its name.

(b) Given below is a schematic representation of secretion of gland A and a blood capillary in its close proximity.

(5)



(i) What do the arrows outside the blood capillary indicate?

(ii) What does the arrow coming out of gland A indicate?

(iii) Choose the name of gland A from the following options :

Sweat, Salivary, Pituitary.

(iv) What is the error shown in this diagram?

(v) If B is one of the target cells in the thyroid, name the secretion being poured out of the gland A.