



SECOND PRELIMINARY EXAMINATION - JANUARY - 2019
BIOLOGY

Class: 10
 Marks: 80
 Time: 2 Hrs.
 Date: 08/01/19

Answer 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 answers.

This Paper is divided into two Sections.

Attempt all question from Section A and four question from Section B.

The intended marks for questions or parts of questions shall be given in brackets [].

This paper consists of 8 printed pages.

SECTION A (40 MARKS)

(All questions are compulsory)

Q.1

A Name the following:

(a) A plant with sunken stomata [5]

(b) The prehuman ancestor

(c) The onset of menstruation in young females.

(d) The blood vessel which supplies blood to the liver.

(e) The type of allele, which in the presence of a contrasting allele is not expressed.

B Explain the following abbreviations: [5]

(a) ABA

(b) DCT

(c) CNG

(d) PNS

(e) IAA

C Define the following terms: [5]

(a) Thigmotropism

(b) Homologous chromosome

(c) Growth rate

(d) Micturition

(e) Endosmosis

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D State whether the following statements are true or false. If false rewrite the correct statement by changing the first or last word only. [5]

- a) The spindle fibres disappear during metaphase.
- b) Auditory nerve is a mixed nerve.
- c) The plant used for formulating the laws of genetics is *Mimosa pudica*.
- d) The process by which the leaves of a strawberry plant lose water droplet is called bleeding.
- e) Contraction of the erector muscles of skin is brought by the para-sympathetic nervous system.

E Choose the correct answer from each of the four options given below [5]

- a) Which one of the following is non-biodegradable?
 - i) DDT
 - ii) fruit peels.
 - iii) paper
 - iv) bark of the tree
- b) Wilting of plant occurs when :
 - i) Phloem is blocked.
 - ii) Xylem is blocked.
 - iii) Both xylem and phloem are blocked.
 - iv) Few roots are removed.
- c) Darwin explained origin of species through:
 - i) Hybridisation
 - ii) Mutation
 - iii) Acquired character
 - iv) Natural selection
- d) The sound of "Lubb" in the heart beat is the first sound and its heard when:
 - i) The AV valves open
 - ii) The AV valves close
 - iii) The semilunar valves open
 - iv) The semilunar valves close
- e) Seed dormancy is induced by
 - i) Ethylene
 - ii) ABA
 - iii) Gibberellin
 - iv) Auxin

F Given below are the sets of five terms. Write each term in logical sequence.

One example is done for you:

Cortical cells, root hair, xylem, soil water, endodermis (absorption of water by the plants)

Ans: soil water, root hair, cortical cells, endodermis, xylem

- a) Active immunity, antigen, antibody, bacteria, lymphocytes

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- b) Spongy cells, upper epidermis, stoma, palisade tissue, substomatal space
- c) Intestine, liver, intestinal artery, hepatic vein, hepatic portal vein
- d) ~~Endothelium, cortex, subcutaneous layer, cuticle~~ Walls of ventricle, SAN, Bundle of His, A.V.Noc
- e) PCT, ascending limb of loop of Henle, collecting tubule, descending limb of loop of Henle, collecting duct. Arteriole: fiber

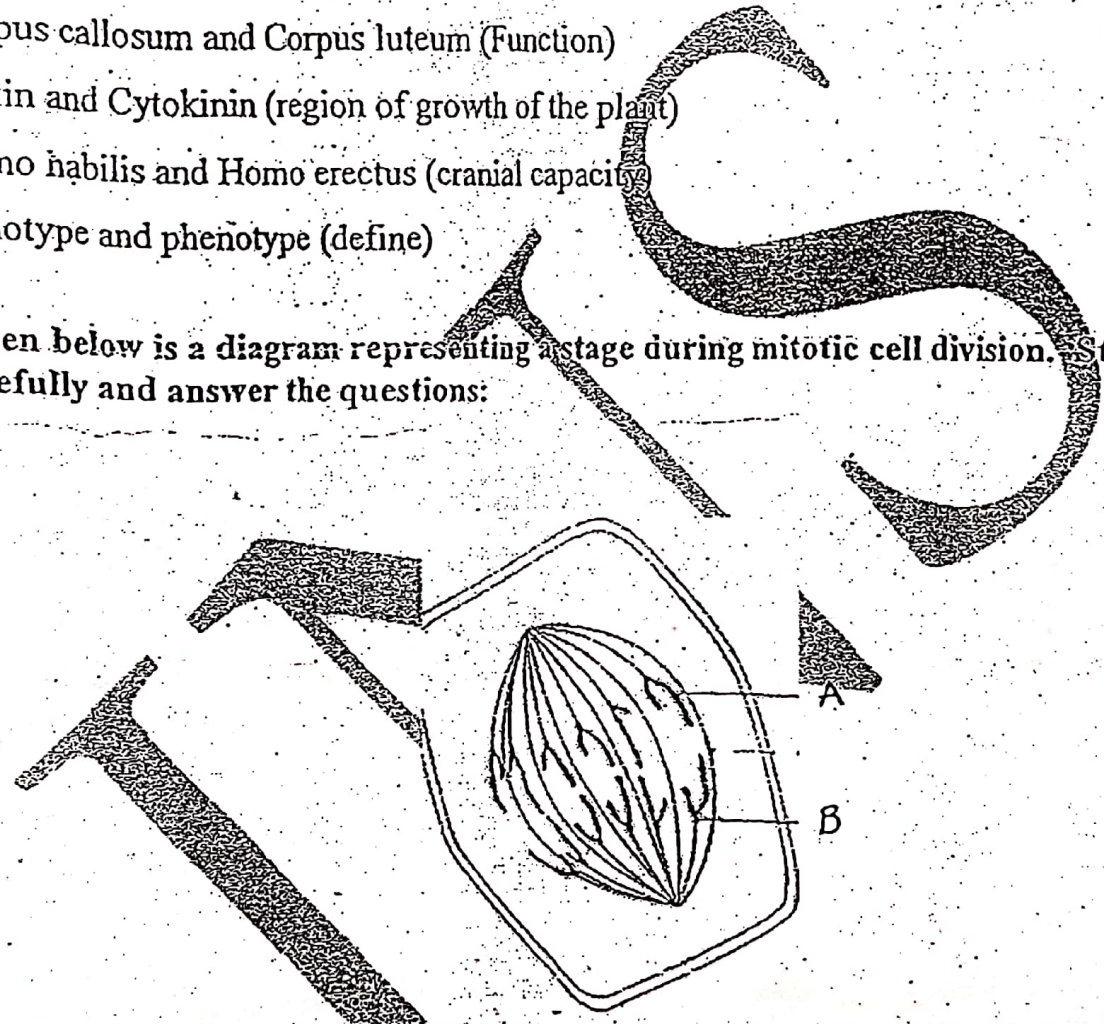
G Differentiate between:

[5]

- a) Near vision and distant vision (Shape of the eye lens)
- b) Corpus callosum and Corpus luteum (Function)
- c) Auxin and Cytokinin (region of growth of the plant)
- d) Homo habilis and Homo erectus (cranial capacity)
- e) Genotype and phenotype (define)

H Given below is a diagram representing a stage during mitotic cell division. Study it carefully and answer the questions:

[5]



- a) Is it a plant cell or animal cell? Give a reason to support your answer.
- b) Identify the stage shown. How is that stage identified?
- c) Name the parts labelled A and B.
- d) Name the stage that precedes the one shown here and draw a neat labelled diagram of it.
- e) How will you differentiate mitosis and meiosis on the basis of the chromosome number in the daughter cells?

SECTION B (40 MARKS)
(Attempt any four questions)

Q.2

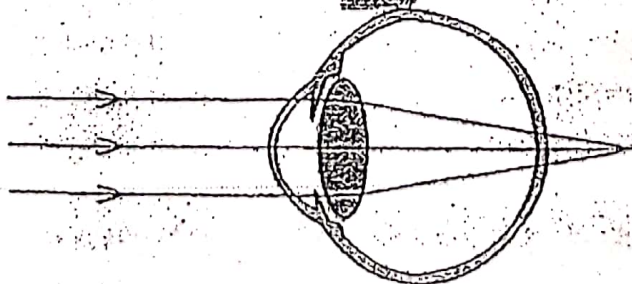
A Complete the following table by filling in the blanks for 1 to 10 with appropriate terms. (Do not copy the table):-

[5]

Sr.No.	Gland	Secretion	Function
i)	Posterior Pituitary	(1)	Uterus contraction during child birth
ii)	(2)	(3)	Promotes glucose utilization by body cells.
iii)	Anterior Pituitary	(4)	Stimulation of adrenal cortex.
iv)	(5)	Vasopressin	(6)
v)	(7)	(8)	Stimulates sympathetic nervous system.
vi)	Thyroid	(9)	(10)

B Maya's grandfather who is 75 years old was not able to read the newspaper. He went to the ophthalmologist who told him that he was suffering from an eye defect. The diagrammatic representation of the defect is given below. Study the diagram carefully and answer the questions that follow:

[5]



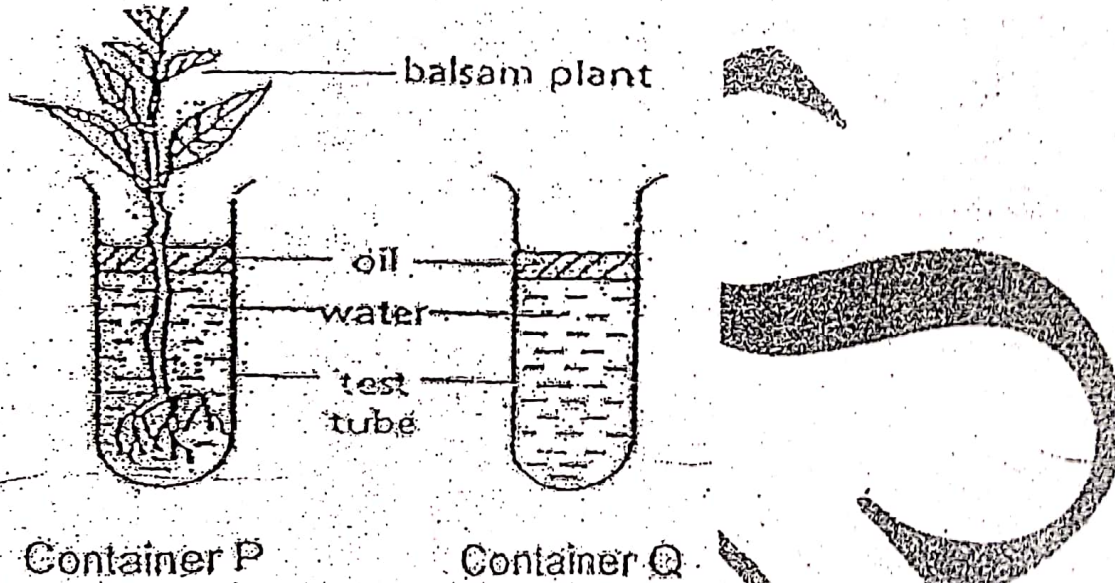
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- Which defect is Maya's grandfather suffering from? What could be the cause of it.
- How can this defect be corrected? Draw the correction to this defect.

- e) Name the condition in which a person is unable to see in dim light or during the night.
State the cause of it.

Q.3

- A A healthy small plant was kept in a test tube containing water, where the root portion was dipped in water. Few drops of oil were put on the upper surface of water. Study the following diagram and answer the following questions: [5]



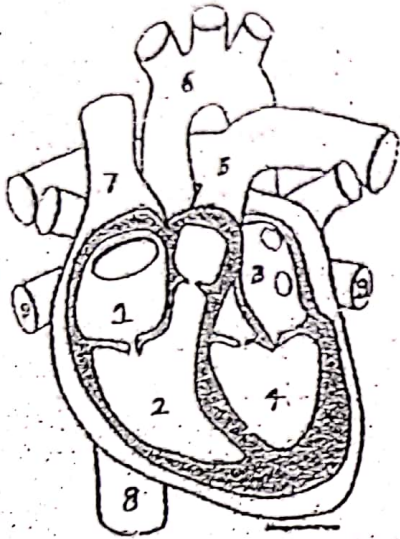
- a) What is the aim of the experiment?
b) Why has oil been put in each test tube?
c) What will be the observations in the two test tubes after about 2-3 days?
d) Give reason to explain any change observed as answered in (c) above.
e) Why has the test tube Q without the plant, been taken in the experiment?

- B [5]
a) Draw a neat labelled diagram of the membranous labyrinth found in the human ear.
b) Based on the diagram above in (a) give a suitable term for each of the following descriptions:
i) The membrane-covered opening that connects the middle ear to the inner ear.
ii) The sensory cells that help in hearing.
iii) The part that is responsible for static balance of the body.
iv) The structure that maintains the dynamic equilibrium of the body.
v) The fluid present in the middle canal of cochlea.
vi) Which part of the ear is responsible for transmitting impulses to the brain?

Q.4

Q.4

A



[5]

- a) Name the parts 1 to 6.
- b) Name the condition which occurs due to the deadening of the heart muscles due to the blockage in the coronary artery.
- c) Which type of blood does part-5 carry?
- d) Mention one structural difference between part '6' and '8'.

B Give the biological or technical terms of the following:

- a) Protein found in the blood which act against antigen.
- b) Thin walled sac of skin that covers the testes.
- c) Structure which connects the placenta with the foetus.
- d) The fluid present between the layers of meninges.
- e) Permanently open structures seen on the bark of an old woody stem.
- f) The process by which leucocytes squeeze out of the capillaries to engulf the germs.
- g) Repeated units of DNA molecules.
- h) Method of contraception in which the sperm duct is cut and ligated.
- i) Pigment providing colour to urine.
- j) The permanent stoppage of the menstrual cycle in females.

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Q.5

A Mendel's experiment was performed on sweet pea plants having axial flowers with round seeds (AARR) and Terminal flowers with wrinkled seeds (aarr). Study the same and answer the following questions: [5]

- a) Give the phenotype and genotype of F1 progeny.
- b) Mention the possible combination of the gametes that can be obtained from F1 hybrid plant.
- c) Work out the progeny of the F2 generation with the help of Punnett Square.
- d) Give the phenotype of the F2 progeny produced by the self-pollination of F1 progeny.

B

What will happen in the following cases. Justify your answer.

[5]

- a) If Vaseline is applied on the twig used for Ganong's photometer.
- b) If there is deficiency of calcium ions in a person's blood.
- c) If green light is used for photosynthesis.

Q.6 Draw a neat labelled diagram of the structure of the human ovum.

A Give reasons:

[5]

- a) Use of CFC is banned in many countries.
- b) Carbon monoxide is highly dangerous when inhaled.
- c) Some women have facial hair like beard and moustache.
- d) When an ovum gets fertilized, the menstrual cycle stops temporarily in a woman.
- e) There is frequent urination in winter than in summer.

B Mention the exact location and function of the following:

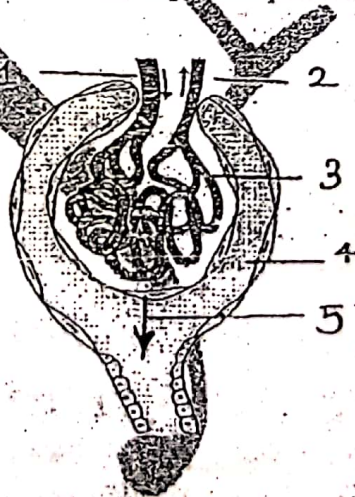
[5]

- a) Prostate gland
- b) Islets of Langerhans
- c) Myelin sheath
- d) Eustachian tube
- e) Semi-circular canals

Q.7

A the diagram below represents a very important part of a structure found in the kidney.

[5]



- a) State the location of the structure mentioned above in the kidney.
- b) Label the parts marked 1 to 4.
- c) Name the fluid entering the part labelled '5' and state the constituents of it.
- d) How does hydrostatic pressure develop in the glomerulus?

Q.8 Answer the following questions:

- a) Mention any two characteristics of the Croonian man.

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B Answer the following questions:-

[5]

- a) Mention any two characteristics of the Cro-Magnon man.
- b) Write any two major reasons for the population explosion in the world.
- c) Write the names of four nitrogenous bases in a DNA molecule.
- d) What is meant by sex linked inheritance?
- e) State any two objectives of 'Swachh Bharat Abhiyaan'.
