



JANKIDEVI
PUBLIC SCHOOL

PRELIMINARY EXAMINATION 2018-2019
BIOLOGY

STD: X
TIME: 2 hrs.

DATE: 11.01.2019
MARKS: 80

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.

This paper comprises of two sections- Section I and Section II.

Attempt all the questions from section I. Attempt any four questions from section II.

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

This paper consists of five printed pages. Nothing should be written on this question paper.

SECTION I (40 Marks)

Attempt all questions from this section.

Question 1

(a) Name the following:

- (i) The part of the brain associated with memory.
- (ii) The part of the ear ossicle which is attached to the tympanum.
- (iii) The type of gene which is not expressed in the presence of a contrasting allele.
- (iv) The competition between members of same species.
- (v) The process of conversion of ADP into ATP during photosynthesis.

[5]

(b) State the main function of the following:

- (i) Cerebrospinal fluid
- (ii) Eustachian tube
- (iii) Suspensory ligament of the eye
- (iv) Sperm duct
- (v) Lenticels

[5]

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(c) Copy and complete the following by filling in the blanks 1 to 5 with appropriate words:

The human female gonads are ovaries. A maturing egg in the ovary is present in a sac of cells called _____ (1). As the egg grows larger, the follicle enlarges and gets filled with a fluid and is now called the _____ (2) follicle. The process of releasing the egg from the ovary is called _____ (3). The ovum is picked up by the oviductal funnel and fertilisation takes place in the _____ (4). In about a week, the blastocyst gets fixed in the endometrium of the uterus and this process is called _____ (5)

[5]

(d) 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. The first one has been done as an example.

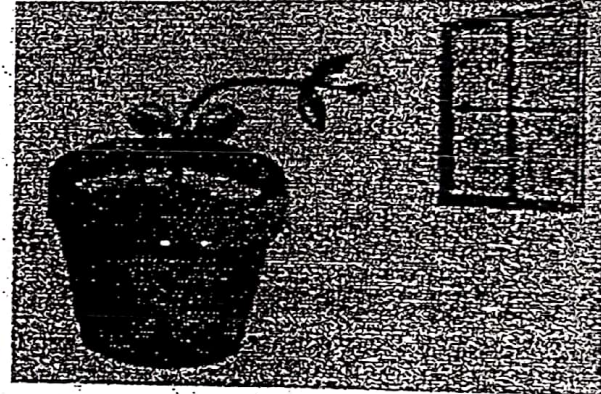
Example: Calyx, Corolla, Stamens, Midrib

Odd term: midrib

Category: Parts of a flower

- (i) Haemoglobin, Glucagon, Iodopsin, Rhodopsin
- (ii) Erythrocytes, Leucocytes, Thrombocytes, Lymphocytes
- (iii) Transpiration, Photosynthesis, Phagocytosis, Guttation
- (iv) Cyton, Photon, Axon, Dendron
- (v) Oxytocin, Insulin, Prolactin, Progesterone

(e) The diagram shows some movement in plants.



- (i) What is the aim of the experiment?
- (ii) Why does the plant move towards the light source?
- (iii) What is geotropism?
- (iv) What are tropic movements?
- (v) What will happen if the light source is removed from the experiment?

(f) Complete the following table by filling in the blanks from 1 to 10 with appropriate terms.

S.No.	Gland	Secretion	Function / Effect on Body
a	Thyroid	(1)	(2)
b	(3)	Vasopressin	(4)
c	(5)	(6)	Promotes Glucose utilization by body cells
d	Lacrimal	(7)	(8)
e	Adrenal Medulla	(9)	(10)

(g) Choose the correct answer from the options given below:

- (i) Cretinism and Myxoedema are due to
 - A. Hypersecretion of thyroxin
 - B. Hypersecretion of growth hormone
 - C. Hyposecretion of thyroxin
 - D. Hyposecretion of growth hormone

(ii) Which of the following is not a natural reflex action?

- A. Knee-jerk
- B. Blinking of eyes due to strong light
- C. Salivation at the sight of food
- D. Sneezing when any irritant enters the nose

(iii) After mitotic cell division, a female human cell will have

- A. 44 + XX chromosomes
- B. 44 + XY chromosomes
- C. 22 + X chromosomes
- D. 22 + Y chromosomes

(iv) Transpiration is the best defined as

- A. Loss of water by the plant.
- B. Evaporation of water from the aerial surfaces of a plant.
- C. Loss of water, as water vapour, by plant.
- D. Release of water by a plant into the atmosphere.

(v) The site of maturation of human sperms is the

- A. Seminiferous tubule
- B. Interstitial cells
- C. Epididymis
- D. Prostate gland

(h) State the exact location of the following:

- (i) Tricuspid valve
- (ii) Amnion
- (iii) Aqueous chamber
- (iv) Seminal vesicle
- (v) Adrenal gland

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[5]

SECTION II [40 Marks]

Attempt any four questions from this section.

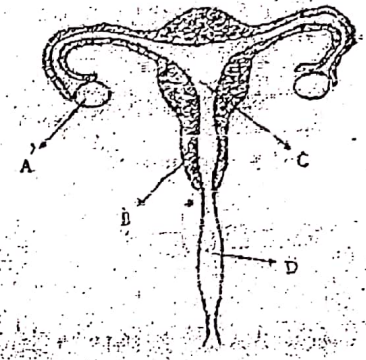
Question 2

(a) Differentiate between the following pairs on the basis of what is mentioned within brackets:

- (i) Spinal nerves and Cranial nerves (number of nerves)
- (ii) Near vision and Distant vision (shape of the eye lens)
- (iii) Blood and lymph (Composition)
- (iv) Vasectomy and tubectomy (explain)
- (v) Haematuria and glycosuria (definition)

[5]

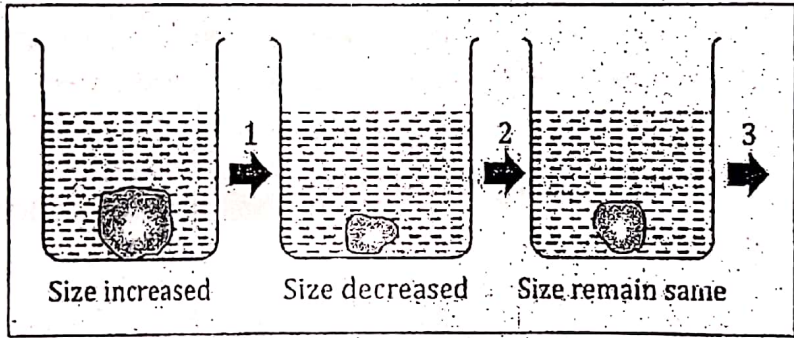
(b) Observe the given diagram and answer the following questions



- (i) Name the part labelled A.
Name any two hormones produced by this part.
- (ii) What happens to the part B.
 - a) If fertilization takes place?
 - b) If fertilization does not take place?
- (iii) Where does the fertilization take place in the given figure?
- (iv) Define fertilization period.

Question 3

(a) A candidate in order to study the process of osmosis has taken 3 potato cubes and put them in 3 different beakers containing 3 different solutions. After 24 hours, in the first beaker the potato cube increased in size, in the second beaker the potato cube decreased in size and in the third beaker there was no change in the size of the potato cube. The following diagram shows the result of the same experiment:

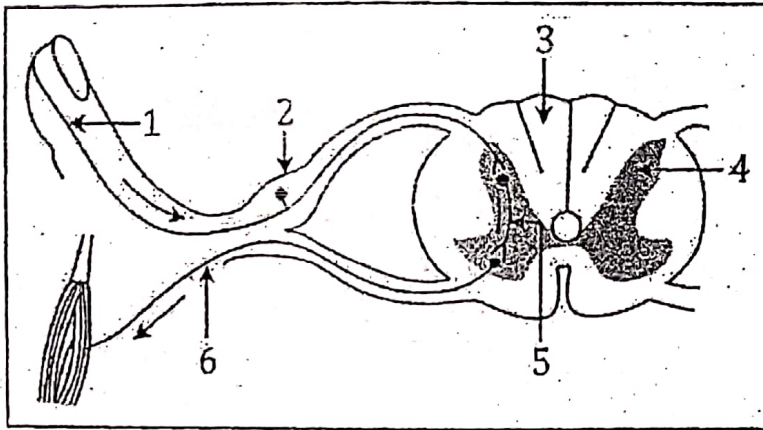


- (i) Give the technical terms of the solutions used in beakers, 1, 2 and 3.
 - (ii) In beaker 3, the size of the potato cube remains the same. Explain the reason in brief.
 - (iii) Write the specific feature of the cell sap of root hairs which helps in absorption of water.
 - (iv) What is osmosis?
 - (v) How does a cell wall and a cell membrane differ in their permeability?
- (b) A potted plant was taken in order to prove a factor necessary for photosynthesis. The potted plant was kept in the dark for 24 hours. One of the leaves was covered with black paper in the centre. The potted plant was then placed in sunlight for a few hours.
- (i) What aspect of photosynthesis was being tested?
 - (ii) Why was the plant placed in the dark before beginning the experiment?
 - (iii) During the starch test, why was the leaf
 - (1) boiled in water
 - (2) boiled in methylated spirit
 - (iv) Write a balanced chemical equation to represent the process of photosynthesis.
 - (v) Draw a neat diagram of a chloroplast and label its parts.

Question 4

- (a) The diagram given below is a representation of a certain phenomenon pertaining to the nervous system. Study the diagram and answer the following questions:

[5]



- (i) Name the phenomenon which is being depicted.
(ii) Give the technical term for the point of contact between the two nerve cells.
(iii) Name the parts 1, 2, 3 and 4.
(iv) Write the functions of parts 5 and 6
(v) How does the arrangement of neurons in the spinal cord differ from that of the brain?

- (b) Give scientific reasons for the following statements:

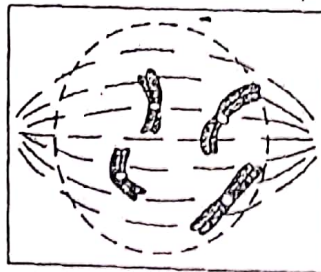
- (i) Industrial melanism supports evolution by natural selection.
(ii) We cannot distinguish colours in moonlight.
(iii) Balsam plants wilt during mid-day even if the soil is well watered.
(iv) Carbon monoxide is highly dangerous when inhaled.
(v) A person walks clumsily after consuming alcohol.

[5]

Question 5

- (a) Given below is a diagram representing a stage during mitotic cell division. Study it carefully and answer the questions which follow:

[5]



- (i) Is it a plant cell or an animal cell? Give a reason to support your answer.
(ii) Identify the stage shown.
(iii) Name the stage which follows the one shown here. How is that stage identified?
(iv) How will you differentiate between mitosis and meiosis on the basis of the chromosome number in the daughter cells?
(v) Draw a duplicated chromosome and label its parts.

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(b) Answer the following:

(i) Name the following.

- (1) A mineral iron needed for the formation of blood.
- (2) A part of plasma from where fibrinogen is removed.

(ii) Give one example of each of the following:

- (1) A water pollutant
- (2) An aquatic plant used in the laboratory to demonstrate O₂ liberation during photosynthesis
- (3) A plant which do not perform photosynthesis.
- (4) A nitrogenous base in DNA

(iii) Expand the following biological abbreviations:

- (1) AVN
- (2) TSH
- (3) MTP
- (4) DNA

Question 6

(a) Draw a diagram of the human eye as seen in a vertical section and label the parts which suit the descriptions relating to the following. [5]

- (i) Photosensitive layer of eye.
- (ii) Structure which is responsible for holding the eye lens in its position.
- (iii) Structure which maintains the shape of the eye ball and the area of no vision.
- (iv) Anterior chamber seen in front of the eye lens.
- (v) Outermost transparent layer seen in front of the eye.

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

- (i) Monohybrid cross
- (ii) Uremia
- (iii) Population density
- (iv) Diaporesis
- (v) Hormones

Question 7

(a) Answer the following in brief:

- (i) State any two harmful effects of noise pollution on human health.
- (ii) With reference to population control what is meant by the following terms:
 - (1) Laprosopy
 - (2) Spermicides
 - (3) Contraceptive

(b) Answer the following:

- (i) Briefly explain Lamarckian theory of Inheritance, citing an appropriate example. [5]
- (ii) What is scientific name of Neanderthal man.
- (iii) Write any two features of cro magnan man.