Gujarat Research Society's
Jasudben M. L. School
Khar (W), Mumbai – 400052

PRELIMINARY EXAMINATION 2018- 2019

Std: X
Subject: Biology

Date: 30th November, 2018
Time: 2 hours
Marks: 80

All questions are compulsory.
Attempt all the questions from Section I. Attempt ANY FOUR questions from Section II
Draw neat labelled diagrams wherever necessary.
All working including rough work should be done on the same sheet as the rest of the answer. The intended marks for question or parts of questions are given in brackets [ ]

Section I (40 Marks)

Question 1:

a) Name the following: [5]

i) The movement of plant parts in response to moisture.

ii) Blood vessel carrying deoxygenated blood from heart to the lungs.

iii) Part of the brain controlling the master gland.

iv) Phenomenon by which the living or dead plant cells absorb water by surface attraction.

v) Cell division in which one parent cell divides into two identical daughter cells.

b) Choose the correct alternative and complete the following sentences. [5]

i) _____ is not the normal constituent of urine.

1) Sodium chloride
2) Uric acid
3) Glucose
4) Creatinine

ii) _____ is/are the symptom(s) shown by a person having exophthalmic goitre.

1) Protruding eyes
2) Decreased heart beat
3) None
4) Both 1 and 2

iii) Lamarck's theory of evolution is based on _____.

1) Use and disuse of body parts
2) Acquiring new characters
3) Inheritance of acquired characters
4) All of the above.

iv) Pons is a part of _____.

1) Forebrain
2) Liver
3) Spinal cord
4) Hindbrain

v) Which of the following is/are excretory organ(s)? _____.

1) Sweat glands
2) Cowper's glands
3) Ceruminous glands
4) Pancreas

c) State whether the following statements are true or false. If false rewrite the correct form of the statement by changing only the **underlined** word. [5]

i) Humidity and transpiration are directly proportional.

ii) The two arms of a chromosome are called centrosome.

iii) The dark reaction of photosynthesis is light independent.

iv) Deafness is caused due to the rupturing of ear pinna.

v) Gestation is the process of fixing of the blastocyst to the uterine wall.

d) State the main function of the following: [5]

i) Nucleus
ii) Chlorophyll pigment
iii) Lenticels
iv) Corpus callosum
v) Amniotic fluid

e) Complete the following pairs to represent the relationship between the functional activity and the structure responsible. [5]
Example: Antibody production and Lymphocytes

i) Blood clotting and _____.
ii) Regulate closing and opening of stomata and _____.
iii) Maintaining temperature for spermatogenesis and _____.
iv) Diffusion of oxygen to foetus and _____.
v) Initiation of cell division and _____.

f) Differentiate between the following pairs with reference to the aspect in brackets: [5]

i) Osmosis and Transpiration (Definition)
ii) Myopia and Hyperopia (Correction)
iii) Gout and Kidney stones (Explain the condition)
iv) Auxins and Cytokinins (Site of synthesis)
v) Tricuspid and Bicuspid valve (Location)

g) Match the items in column A with those which are most appropriate in column B. You must rewrite the matching pairs: [5]

Column A		Column B	
i.	Luteal phase	a)	Shedding of endometrium lining
ii.	Follicular phase	b)	Onset of menstruation
iii.	Menstrual phase	c)	Rupture of Graffian follicle
iv.	Ovulatory phase	d)	Thickening of endometrium
v.	Menarche phase	e)	Formation of corpus luteum

h) Give reasons: [5]

i) Bean seeds are soaked in water before cooking.
ii) Xerophytic plants like cactus have their leaves modified to spines.
iii) Depletion of ozone layer is a serious problem.
iv) Barrier methods like diaphragm are effective methods of contraception.
v) Overproduction is an important feature of living beings.

Section II (40 Marks)

Attempt ANY FOUR questions from this section

Question 2:

a) On a bright sunny day water weeds growing in an aquarium were seen actively giving off a gas. [5]

i. Name the physiological process studied in plants.

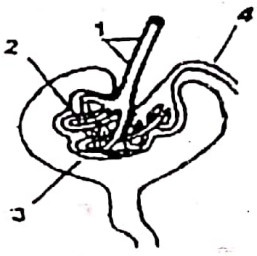
ii. Define the process mentioned in (i)

iii. Write the chemical reaction for the process mentioned in (i)

iv. Write the test that can used to identify the gas released in the above process.

v. What change will you observe in the rate of bubble evolution if a pinch of sodium bicarbonate is added to the aquarium water? Give reason to support your answer.

b) Study the diagram given below and answer the following questions. [5]



i. Name the parts labelled 1, 2 and 3.

ii. Name the region in the kidney where the given structure is present.

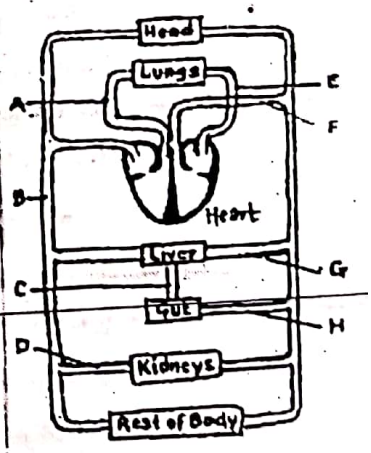
iii. What is the collective term used for 2 and 3?

iv. Mention the structural and functional unit of kidney.

v. Why is the right kidney at a slightly lower level than the left?

Question 3:

a) Study the diagram given below and answer the following questions: [5]



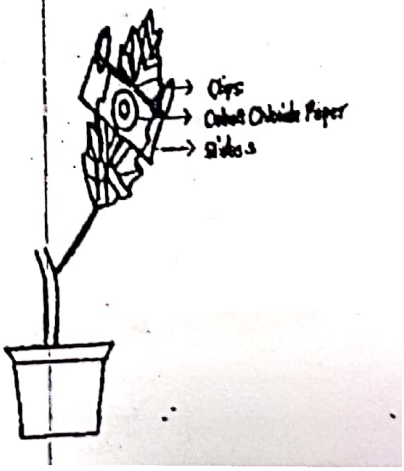
i) Name the blood vessels labelled B, C, E and G.

ii) Several hours after a meal containing a lot of protein, which blood vessel will contain the highest concentration of urea?

iii) Which blood vessel would contain the highest concentration of amino acids and glucose soon after a meal?

iv) In which blood vessel will the blood carry maximum oxyhaemoglobin?

b) Given below is the diagram of an experiment just at the start. Study the diagram carefully and answer the following questions. [5]



i) Name and define the physiological process studied.

ii) What is the aim of the experiment?

iii) What would you observe in the experimental set up after an hour? Give reason to support your answer.

iv) Mention any two adaptations found in plants to overcome the physiological process mentioned in (i) above.

Question 4:

a) Study the diagram given and answer the questions that follow: [5]

i) Name the four nitrogenous bases that form a DNA molecule.

ii) Expand: DNA

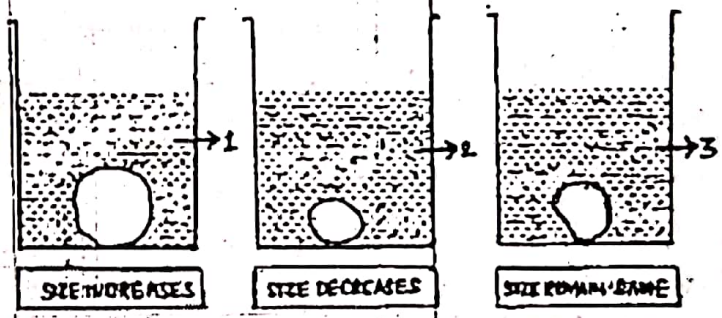
iii) Name the unit of heredity.

iv) Differentiate between Mitosis and Meiosis on the basis of following points:

1) Number of chromosomes in daughter cells.

2) Variation

b) In order to study the process of osmosis three potato cubes were taken and were put into three different beakers containing three different solutions. After 24 hours change in the sizes of the potato cubes was observed. The following diagram shows the result of the same experiment. Study the same and answer the questions that follow: [5]



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) State specific features of the root hair with respect to the following points, which help in absorption of water.

1. Cell sap
2. Cell wall

iv) How does a cell wall and cell membrane differ in their permeability?

Question 5:

a) A pure breeding plant bearing purple flowers and round seeds was crossed with a pure breeding plant bearing white flowers and wrinkled seeds. The F1 generation produces all plants bearing purple flowers and round seeds. [5]

i) Which are the dominant traits?

ii) Write the genotype of the F1 generation.

iii) If F1 plants are self-pollinated, identify the possible phenotype of the F2 generation.

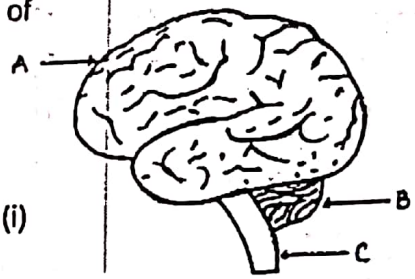
iv) In what phenotypic ratio the offspring of F2 generation would be?

b) Name the endocrine gland and their hormones responsible for the following diseases/ disorders. [5]

i) Myxoedema
ii) Acromegaly
iii) Diabetes Insipidus
iv) Hypoglycaemia
v) Cushing's Syndrome

Question 6:

a) Study the diagram given and answer the questions that follow: [5]



i) What are the structural and functional units of Nervous system?
ii) Name the parts labelled A, B, C in the diagram.
iii) State the chief function of parts labelled A and B.
iv) How are the parts of the units mentioned in (i) arranged in A and C?
v) Expand: CSF.

b) State any two specific characteristics of Human ancestor Australopithecus. [2]

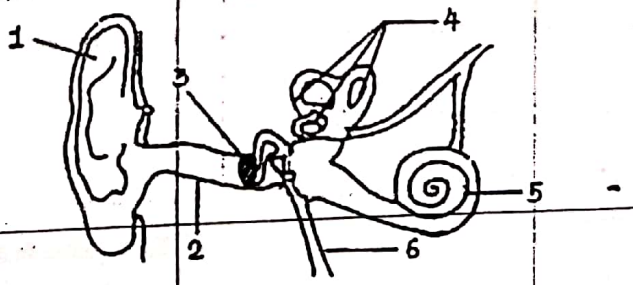
c) Write a short note on Abscisic acid as plant growth hormone with respect to the following points: [3]

1. Site of synthesis
2. Role in seed development
3. Role in increasing tolerance of a plant to less availability of water.

Question 7:

a) Draw a neat labelled diagram of female reproductive system. [2]

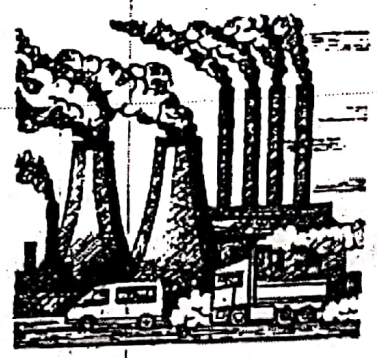
b) Name the parts labelled 1-6 in the diagram [3]



c) Define the following terms: [2]

i) Demography ii) Population density

d) Study the diagram and answer the questions that follow: [3]



i) Identify the type of pollution depicted in the picture alongside.
ii) State any two sources of the pollution mentioned in (i)
iii) Write two ways in which this pollution can be controlled.

All the Best