SMT. SULOCHANADEVI SINGHANIA SCHOOL, THANE

CLASS	SUBJECT	EXAM	DATE	MARKS	TIME	NO. OF SIDES
10	BIOLOGY	PRELIMS	4/1/2019	80	2Hrs	6

SECTION I (40 marks)

Attempt all questions

1a. Name the following- [5]

i. The chemical substance released by disintegrated tissues and platelets at the site of wound.
ii. The process of cutting and ligating oviduct in surgical method of contraception.
iii. The pressure of cell contents on the cell wall when the cell is fully charged with water.
iv. The innermost single layer of squamous epithelial cells present in the blood vessels.
v. The pigment present in the Rod cells of retina.

b. Find and write the other five correct pairs from the following words. [5]

For example- Insulin - Beta cells

Thigmotropism, Beta cells, Oxytocin, Pure strain, Anterior Pituitary, Exosmosis, Magnesium, Insulin, Chlorophyll, Touch, Isotonic solution, Posterior Pituitary, Hypertonic solution, Manganese, Homozygous

c. State the exact location of the following structures- [5]

i. Fovea centralis
ii. Eustachian tube
iii. Pulmonary semilunar valve
iv. Organ of Corti
v. Hydathodes

d. State the function of the following – [5]

i. Pulmonary Artery
ii. Gibberellin
iii. Guard cells
iv. Ear ossicles
v. Ureter

e. Arrange the given set of words in their correct logical sequence- [5]

i. *Homo erectus, Australopithecus*, Cro-magnon, *Homo habilis*, Homo sapiens sapiens
ii. Afferent arteriole, Renal artery, Efferent arteriole, Vasa recta, Glomerulus
iii. G_1 phase, Cytokinesis, Anaphase, Prophase, Telophase
iv. Motor neuron, Receptor, Stimulus, Sensory neuron, Effector
v. Lower epidermis, Palisade mesophyll, Upper epidermis, Spongy mesophyll, Substomatal space

f. Fill in the blanks- [5]

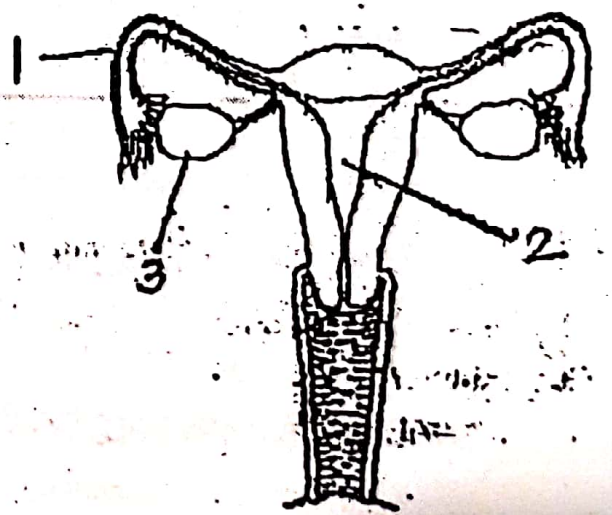
The _____I_____ at the top of the head of the sperm secretes an enzyme which facilitates the entry of the sperm into the ovum. The _____II_____ contained in the middle piece of sperm provides energy for the activity of the sperm and its _____III_____ makes lashing movements for its propulsion. The process of fusion of the ovum and the sperm known as _____IV_____ thus results in the production of a zygote. The zygote soon starts dividing and by the time it reaches the uterus it forms a small hollow ball of numerous cells called _____V_____.

g. Define the following terms- [5]

i. Deplasmolysis
ii. Diapedesis
iii. Homologous chromosomes
iv. Photolysis
v. Evolution

h. Observe the given diagram and answer the following questions- [5]

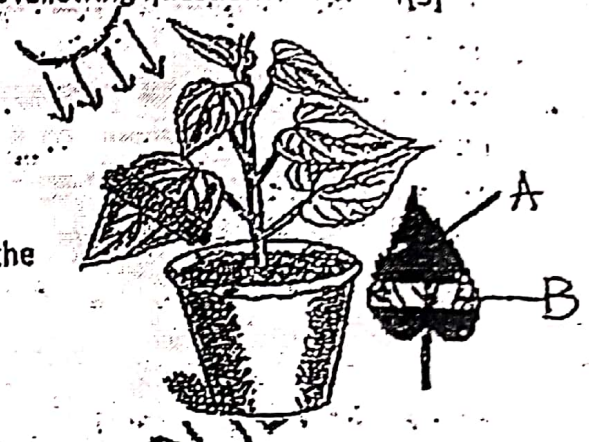
i. State the functions of 1 and 2
ii. Name a hormone secreted by part 3.
iii. What is gestation?
iv. State the chromosome number of the gamete released by 3.



SECTION II (40 marks)

Attempt any four questions

2a. Observe the given experimental set up and answer the following questions- [5]

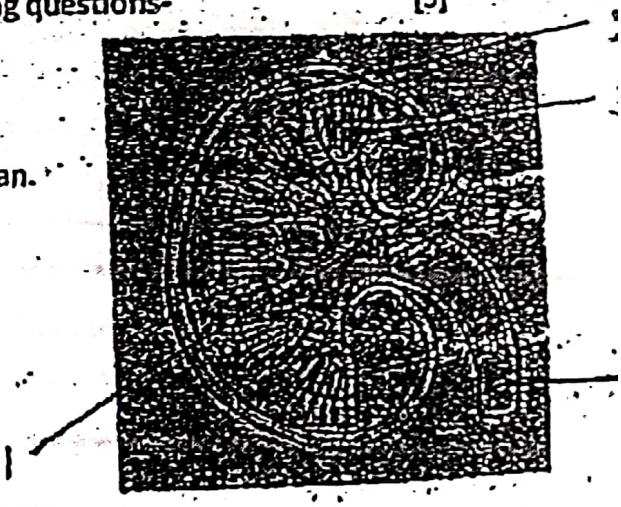


i. Identify the factor studied in the experiment.
ii. Define the physiological process being studied.
iii. Mention two significances of the physiological process.
iv. State three adaptations of leaves which facilitate the above mentioned process.
v. What will be the observation for the starch test performed on parts A and B?

b. Differentiate between the following pairs- [5]

i. Stoma and Stroma (Location)
ii. Corpus callosum and Corpus luteum (Function)
iii. Platelets and Leucocytes (Function)
iv. Thyroxine and Haemoglobin (Mineral present)
v. Mitosis and Meiosis (Occurrence in animal body)

3a. Observe the following diagram and answer the following questions- [5]



i. Label the parts 1 to 4.
ii. Why the part 3 has a striped appearance?
iii. Name the endocrine gland associated with this organ.
iv. Name three abnormal constituents of urine.

b. Answer the following questions- [2]

i. What is green house effect?
ii. State two ways to reduce air pollution.

c. i. What are vestigial organs? Name two vestigial organs of human body. [2]

ii. Who proposed - 1. Ideas of Natural Selection [1]

2. Theory of Inheritance of acquired characters?

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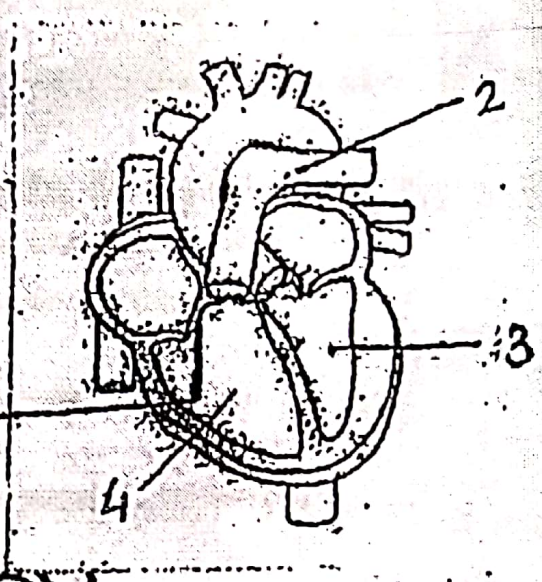
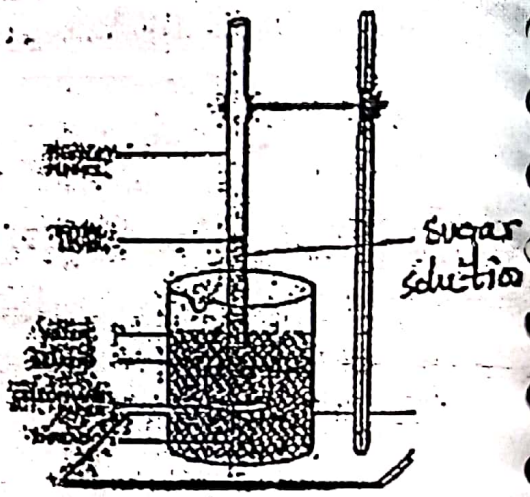
4a. Observe the given diagram and answer the following questions- [5]



I. Label 1 and 2
II. Why does the part 3 have thicker muscular wall than part 4?
III. Why the SA node is called pacemaker of the heart?
IV. Draw the diagrams of Neutrophil and Eosinophil to show the difference in their structure.

b. Observe the given experiment and answer the following questions- [5]



I. Define the physiological process studied.
II. What is the observation after few hours?
III. What will be the observation if instead of cellophane paper the following are used- 1. Muslin cloth 2. Rubber sheet
IV. Name the process by which minerals are passed into the root cells from the soil.
V. Differentiate between Turgidity and Flaccidity based on the tonicity of the solution in which they occur.
VI. Give reason why when common salt is sprinkled on grass growing in the lawn, it is killed at that spot.

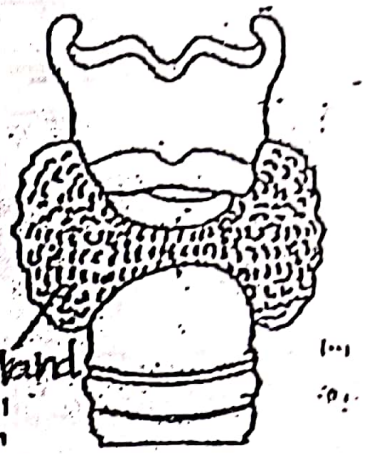
5a. Draw a neat diagram and of the vertical section of the human eye and label only those parts of which the functions are given- [3]

I. The structure that protects the cornea.
II. This layer has blood vessels which provide nutrition to the retina
III. This structure holds the lens in position.

b. Elaborate the abbreviated forms- [2]

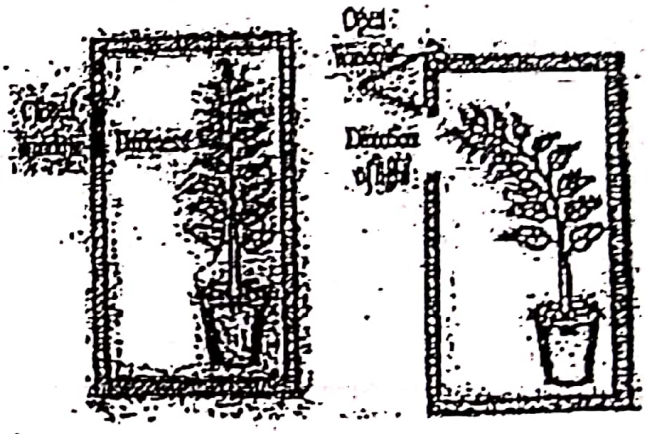
I. IUD
II. NADP
III. FSH
IV. SAN

c. Observe the given diagram of an endocrine gland and answer the following questions- [5]



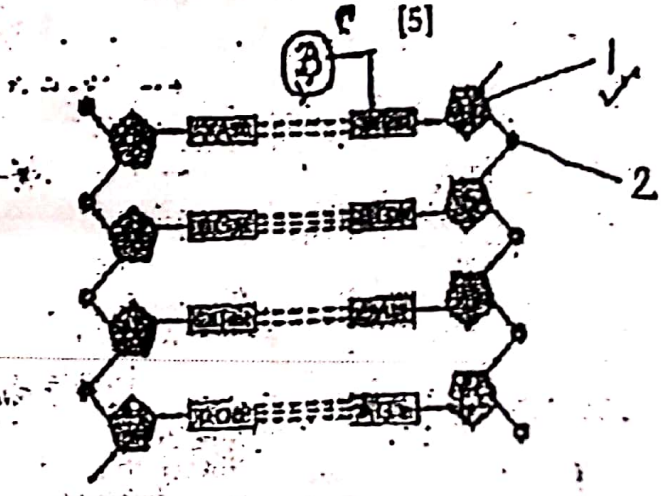
i. Name the endocrine gland shown in the diagram.
ii. Name the secretion of the gland that regulates the basal metabolic rate.
iii. Name the disease caused due to the under secretion of the mentioned hormone in children. Give two symptoms of the disease.
iv. Name the disease caused due to hyper secretion of the above mentioned hormone and state two symptoms of it.
v. State the exact location of the gland in the human body.

6a. Study the given experiment and answer the following questions- [3]



i. What is Tropic movement?
ii. Identify the type of tropic movement shown in the experiment.
iii. Name the plant hormone which is responsible for this tropic movement.
iv. State one function of Ethylene as a plant hormone.

b. Observe the given diagram of an important macromolecule in our cells and answer the following questions- [5]



i. Label the parts 1 to 4
ii. Name the unit constituted by the parts 1, 2 and 3 collectively.
iii. Define -1. Genes 2. Mutation
iv. Name the process by which there is mutual exchange of genetic materials between homologous chromosomes during meiosis.

c. Draw a neat labeled diagram of open stomatal apparatus. [2]

7a. A homozygous tall plant (T) bearing red coloured (R) flowers is crossed with a homozygous dwarf (t) plant bearing white (r) flowers — [5]

i. Give the genotype and phenotype of the plant of F_1 generation.
ii. Mention possible combinations of the gametes that can be obtained from the F_1 hybrid plants.
iii. Mention the phenotypes of the offsprings obtained in F_2 generation
iv. What is the phenotypic ratio obtained in F_2 generation?
v. State the law of Independent Assortment.

b. i. Draw neat labeled diagram of an animal cell in Metaphase with 6 chromosomes. [2]

ii. Differentiate between Cytokinesis in animal cell and plant cell based on the structures involved [1]

c. Observe the given structure and answer the following questions- [2]

i. Label the parts 1 and 2.
ii. What will happen if part 3 is damaged in a person?