

GREENLAWNS HIGH SCHOOL
PRELIMINARY EXAMINATION YEAR 2018

SUBJECT : BIOLOGY
TIME : 2 HOURS

CLASS : X
MARKS : 80

Answers to this paper must be written on the paper provided separately.
You will not be allowed to write during the first 10 minutes. This time is to be spent in reading the question paper.

Section I is compulsory. Solve all questions.
Section II has 6 questions. Solve any 4.

SECTION - I

Question 1.

[10]

a) Name the following.

- i. Cells in which mitosis takes place.
- ii. Genetic constitution of man
- iii. Process by which plants lose excess water.
- iv. Site of Hill Reaction
- v. Inner concave side of Kidney
- vi. Area where image is formed in the eye.
- vii. Male copulatory organ
- viii. Division of nucleus
- ix. Part of the ear associated with static balance.
- x. Substance responsible for colour of urine.

b) Give the full form of .

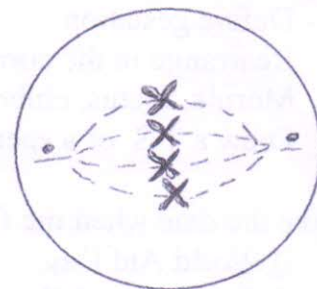
[2]

- i. LH
- ii. DDT
- iii. NADP
- iv. IUD

c) The diagram below shows a stage during mitotic division in a cell

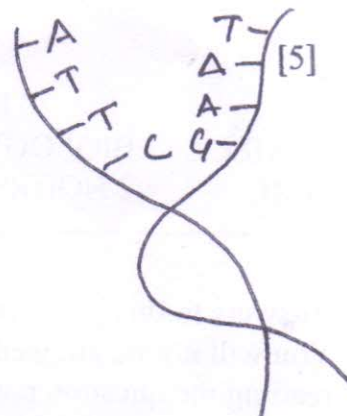
[5]

- i. Identify the stage. Give a reason for your answer
- ii. Draw the next stage
- iii. Which cell has been drawn?
- iv. What is the importance of mitosis (2 points)
- v. Name the type of cell division taking place in pollen grains.
- vi. Give two differences between mitosis in plant cell/ animal cell



d) Answer the following questions with respect to DNA.

- i. Give the full form of DNA
- ii. Who proposed the model.
- iii. Name the 4 types of nitrogenous bases.
- iv. Give the difference between nucleotide and nucleosome
- v. Redraw the correct sequence for the DNA strand drawn below
- vi. What is the importance of interphase.



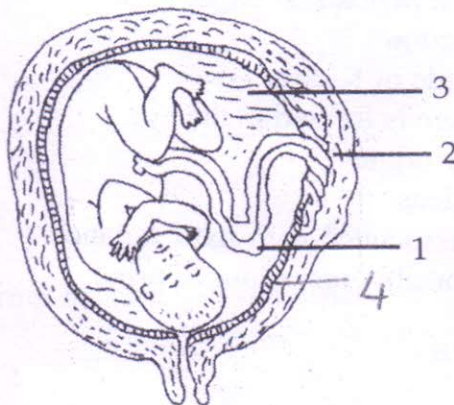
e) Give reasons for the following statement.

- i. The pituitary gland is also known as the master gland.
- ii. Gametes have haploid number of chromosomes.
- iii. Raisins swell when placed in water.
- iv. Pancreas is an endocrine and exocrine gland.
- v. A large number of sperms are produced

[5]

f) With respect to the diagram representing the foetus, answer the questions that follow.

[6]



- i. Label parts 1 and 2
- ii. Give the function of parts 3 and 4.
- iii. Define gestation
- iv. Rearrange in the correct sequence.
Morula, foetus, embryo, blastocyst, zygote
- v. Draw a T.S. of a sperm.

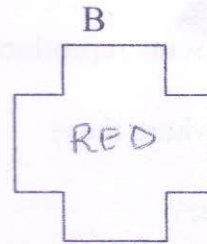
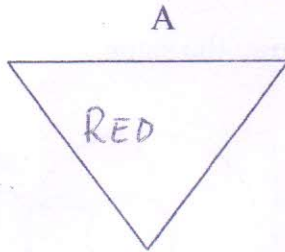
g) Give the date when the following events are celebrated.

- i) World Aid Day
- ii) International Ozone Day

[2]

h) Drawn below are 2 symbols.

[5]



- Identify what these symbols stand for
- Give 2 functions associated with A
- List 4 functions associated with B.
- Give 2 reasons for population explosion

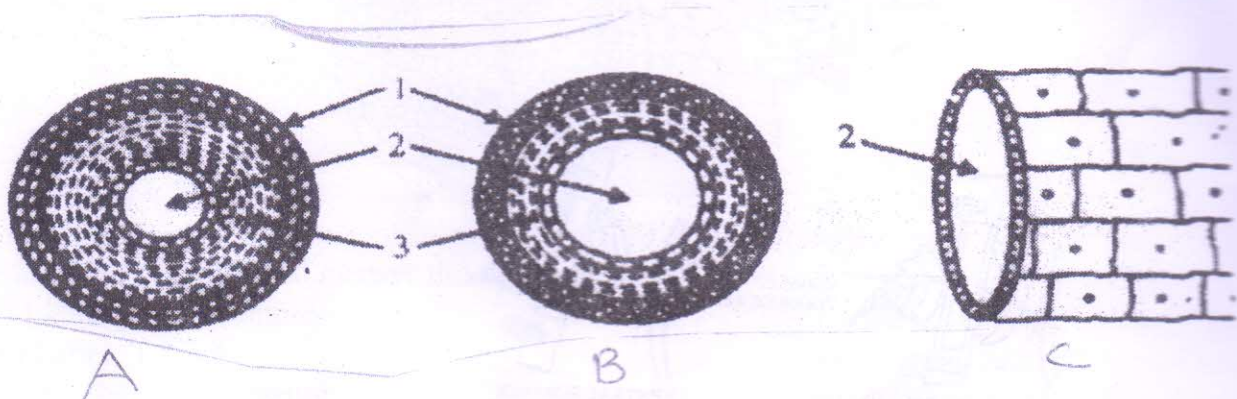
SECTION -II

Solve any 4 from the given 6 questions.

Question 2.

[5]

a) The diagram below shows a cross section of blood vessels.



- Identify A,B,C
- Name the type of blood that flows through A.
- Name parts 1,2,3
- Give 1 difference between A and B on the basis of the pressure of blood flowing in them.
- Name the blood vessel that carries blood to heart.
- How is C suited to do its function.

b) Give the location and function of the following.

[5]

- Hypothalamus
- Hydathodes
- Bicuspid valve
- stomata
- Visual purple

Question 3.

a) The diagram below represents reproductive cells A and B. study the same. [5]

i) Identify A and B

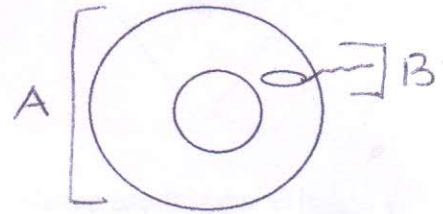
ii) Name the specific parts where these cells are produced.

iii) where do these cells unite?

iv) Name the hormone secreted by

i) Ovary ii) testis

v) Give the function of each of the accessory glands present in the male reproductive system.



b) A pure tall plant bearing red flowers was crossed with a pure dwarf tree with white flowers. [5]

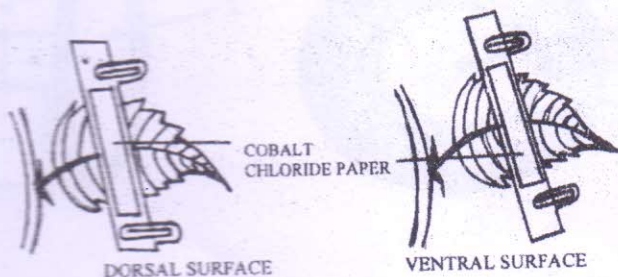
i) Give the genotype and phenotype of the F_1 generation.

ii) If the offsprings of F_1 generation are self pollinated give the phenotype of the F_2 generation

iii) State Mendel's laws

Question 4.

a) Drawn below is a physiological process carried out by plants. [5]



Study it and answer the questions that follow.

i) Define the process

ii) What is the aim of the experiment

iii) What would you observe after sometimes? Why?

iv) Mention 2 adaptation found in plants to reduce the above mentioned process.

v) Name 2 factors that increase the rate of the above mentioned process.

b) Give one difference between the following pairs. [5]

i) Centrosome/ centromere (function)

ii) Homozygous/ Heterozygous chromosome/ (definition)

iii) Vitreous Humor/ Aqueous Humor

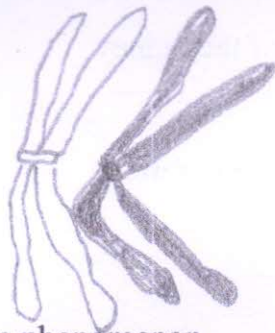
iv) Chromatin/ chromosome

v) Transpiration and guttation

Question 5.

a) Study the diagram drawn below and answer the question that follow

[5]

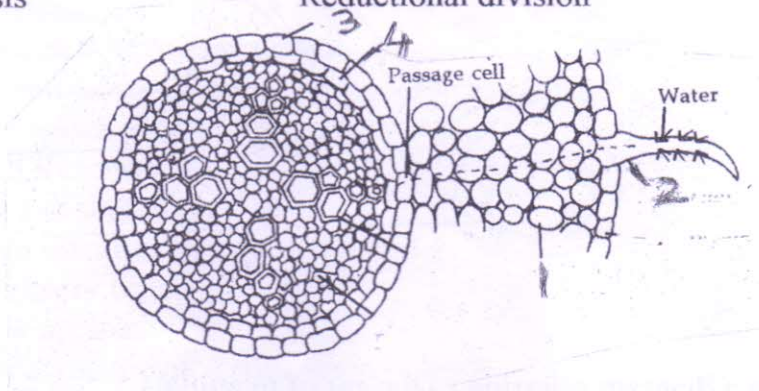


- i) Define the above phenomenon
- ii) Draw the above next stage
- iii) Give the importance of the above phenomenon
- iv) Match the following

Karyokinesis
Mitosis
Interphase
Cytokinesis
Meiosis

Resting phase
division of cytoplasm
Equational division
Reductional division

b)



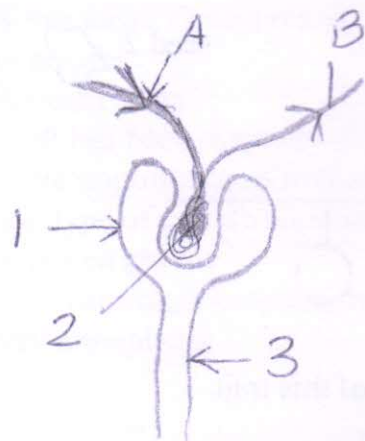
[5]

Study the diagram and answer the questions that follow

- i) Identify the structure
- ii) Label 1,2,3,4
- iii) Define root pressure
- iv) How do minerals move into the root
- v) Are root hairs a part of the cell?
- vi) What is the function of xylem and phloem

Question 6.

a)



[5]

Drawn above is a part of the kidney

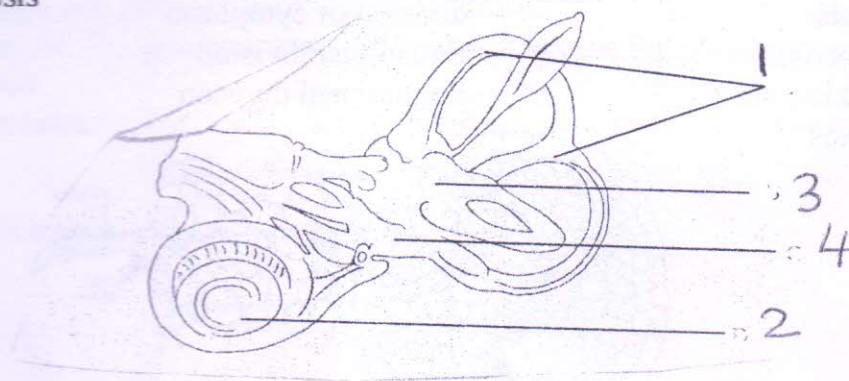
- i) Name the smallest functional and structural unit of the kidney
- ii) Label parts 1,2,3
- iii) Give the difference between A and B.
- iv) Name the region of the kidney where this structure is formed
- v) Name the stages involved in urine formation.
- vi) Why is urine thicker in summer than in winter.

b) Define the following terms

[5]

- i) Allele
- ii) Mutation
- iii) phenotypes
- iv) monohybrid cross
- v) Spermatogenesis

Question 7



[3]

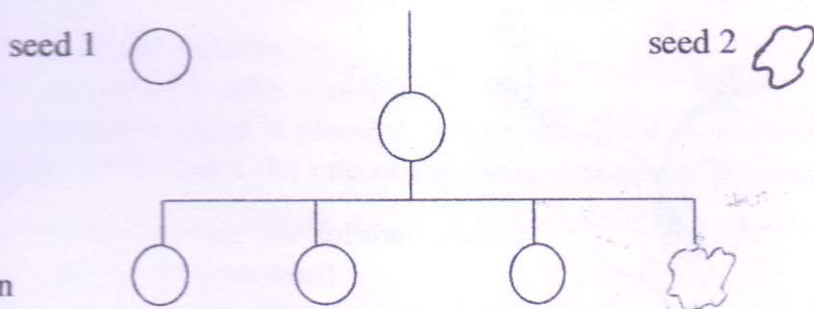
a) Drawn above is a diagram referring to the ear of mammals.

- i) Label parts 3 and 4.
- ii) Give the function of parts 1 and 2
- iii) Name the canal of the cochlea
- iv) Name the sense cells in the ear
- v) Give the function of the ossicles.

b) Draw T.S of spinal nerves.

[2]

c)



[5]

- i) What is the seed character shown
- ii) What are the dominant and recessive alleles of this trait
- iii) Write the phenotype of F₁ and F₂ generation.
- iv) Draw a punett square to show genotype offspring if a haemophilic man marries a carrier woman.