ST. GREGORIOS HIGH SCHOOL
PRELIMINARY EXAMINATION, JANUARY 2019
BIOLOGY

STD. X
DATE: 09/01/18

80 MARKS
TIME: 2 HOURS

You will not be allowed to write during the first 15 minutes. This time is to be spend in reading the Question Paper. The time given at the head of this paper is the time allowed for writing the answer.

Attempt all questions from Section I and any four questions from Section II. The intended marks for questions or parts of questions are given in the brackets [ ]

SECTION I (40 MARKS)

Attempt all questions from this Section.

Question 1

(a) Name the following: [5 MARKS]

i. The fluid that provides protection and nourishments to the cells of the brain.
ii. The part of the kidney containing the Bowman's Capsule.
iii. The phenomenon that is observed in Nasturtium in the early hours.
iv. The process by which the wooden doors swell up.
v. The Radioactive waste that caused the severe damage in Mayapuri Delhi in 2010.

(b) Choose the odd one out of the following terms given and name the categories to which the others belong: [5 MARKS]

i. Wisdom tooth; Vermiform Appendix; Forelimbs; Pinna
ii. Thinness of leaves; Narrow leaves; Numerous stomata; More chloroplast
iii. Oestrogens; Progesterone; Testosterone; Prolactin
iv. Bile pigments; Urea; Albumin; Glucose
v. Skin Pigmentation; loss of weight; hypoglycaemia; hyperglycaemia

(c) Match the items given in Column A with the most appropriate ones in Column B and rewrite the correct matching pairs. [5 MARKS]

Column A	Column B
i. Cushing Syndrome	1. Abscisic Acid
ii. Hypoglycemia	2. Gibberellins
iii. Myxoedema	3. Hyposecretion of insulin
iv. Closing of Stomata	4. Hypersecretion of thyroxine
v. Ripening of fruits	5. Hyposecretion of thyroxine
	6. Ethylene
	7. Hypersecretion of insulin
	8. Osteoporosis

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(d) Choose the correct answer from each of the four options given below: [5 MARKS]

i. DDT is
   a. non-degradable pollutant
   b. degradable pollutant
   c. green-house gas
   d. none of these

ii. The specific function of light energy in the process of photosynthesis is to
   a. Activate Chloroplast
   b. Split water
   c. Reduce CO_2
   d. Synthesis Glucose

iii. Nissl's granules are found in
   a. Muscle Cells
   b. Nerve Cells
   c. Blood Cells
   d. Bone Cells

iv. Function of Eustachian tube is to
   a. Keep middle ear in proper place
   b. Provide air to ear ossicles
   c. Equalise air pressure in middle and external ear
   d. Keep of dirt from middle ear

v. Nephron discharge their urine at the
   a. Urethra
   b. Renal Pelvis
   c. Urinary Bladder
   d. Renal Pyramids.

(e) State true or false. Rewrite the correct statement by changing the underlined words of the statement. [5 MARKS]

i. Neutrophils produce antibodies.
ii. The growth rate is the number of individuals per square kilometres at any given time.
iii. Henle's loop helps in absorption of Potassium and Chloride ions.
iv. During dark adaptation the regeneration of iodopsine occur.
v. Gibberellins inhibits apical dominance.

(f) Complete the following: [5 MARKS]

The zygote undergoes ____i____ and forms a hollow ball of numerous cells called ___ii___ which gets fixed to the ____iii____ of the uterus by the process known as ____iv____. The developing embryo is connected by the ____v____ to the ___vi_____. The term of development of the embryo in the uterus is called ____vii____ which lasts for _____viii____ days. Under the influence of the _____ix_____ the uterus undergoes contraction which results in ____x____.

(g) Given below are 5 sets of terms. In each arrange and rewrite each set so as to be in a logical sequence without changing the given first term. [5 MARKS]

Example: Mouth; Large intestine; Oesophagus; Stomach; Small intestine.
Answer: Mouth; Oesophagus; Stomach; Small intestine; Large intestine.

i. Afferent arteriole; Efferent arteriole; Glomerulus; Renal vein; Vasa Recta
ii. Imbibition; Root pressure; Transpiration; Capillarity; Osmosis.
iii. Forebrain; Hypothalamus; Cerebellum; Cerebrum; Medulla Oblongata
iv. Puberty; Follicular phase; Luteal phase; Menstrual phase; Ovulatory phase
v. Conjunctiva; Pupil; Lens; Aqueous humour; Fovea Centralis.

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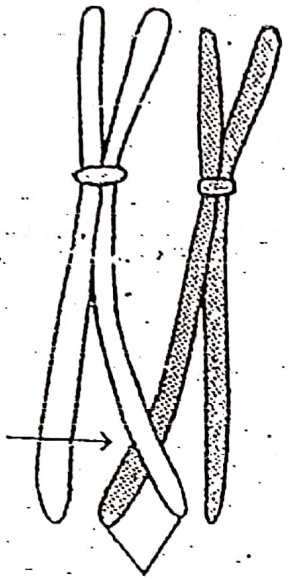
[5 MARKS]



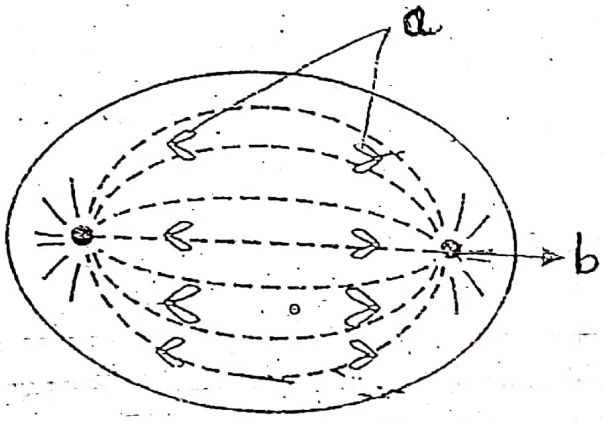
a. Identify the given chromosome shown.
b. What is the significance of the process shown?
c. In which type of division
   i. does the above process occur
   ii. name the cell
d. How many daughter cells are produced at the end of the division and how many chromosomes do they contain?
e. Why should the cell mentioned by you in question h (c-ii) undergo such a division?

SECTION II (40 MARKS)

Attempt any four questions from this Section.

Question 2

a.



[5 MARKS]

1. Identify the phase shown and give the unique features observed.
2. Label the parts shown
3. Draw a neat diagram to show the phase prior to the given phase.
4. Give the characteristics of the phase that proceeds the given phase.
5. How does cytokinesis differ in plant and animal cell?

b. Explain the following terms:
   1. Biomedical waste
   2. Mortality
   3. Colour blindness
   4. Pulse
   5. Alleles

[5 MARKS]

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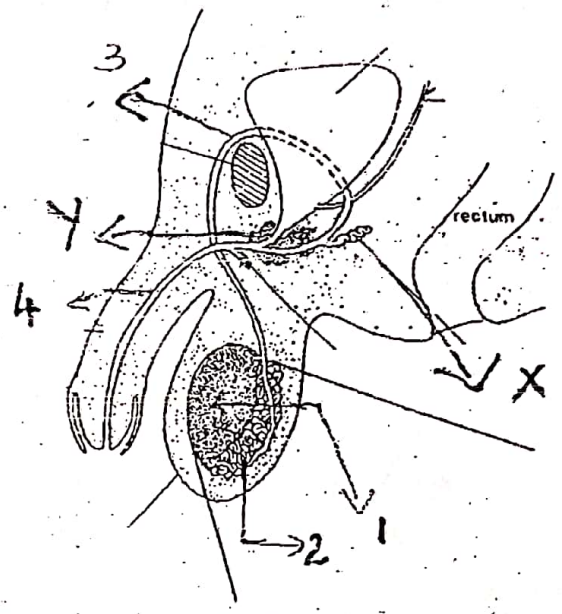
Question 3

a. [5 MARKS]



1. Identify the given diagram
2. Label the parts
3. Give the functions of part X and location of part Y
4. What is semen? Where is part 1 located and why?
5. Why are sperms produced in large numbers?

b. Give the location of [5 MARKS]

1. Chloroplast
2. Seminiferous tubules
3. Lens of eye
4. Eustachian tube
5. Pituitary

Question 4

a. Give appropriate biological or technical term for the following: [5 MARKS]

1. An example of mutagen whose effect can be seen generation after generation.
2. The solution in which the strips of potato will appear shrivelled.
3. Respiratory openings found on the stem of woody plants.
4. Enzyme that activates prothrombin.
5. The part that converts sound waves into mechanical vibrations.
6. Conversion of adenosine diphosphate into adenosine triphosphate.
7. Substances that increase the formation of urine.
8. Hormones that stimulates the sympathetic nervous system.
9. A gas responsible for greenhouse effect.
10. Layer of eye, which prevent reflection of light.

b. Give reasons: [5 MARKS]

1. Cro-Magnon man is said to be the direct ancestor of the modern man.
2. Ozone layer depletion is hazardous to human health.
3. We gargle with saline water in case of throat infection.
4. Transpiration is a vital process for plants.
5. Need to limit the size of family is more vital than ever.

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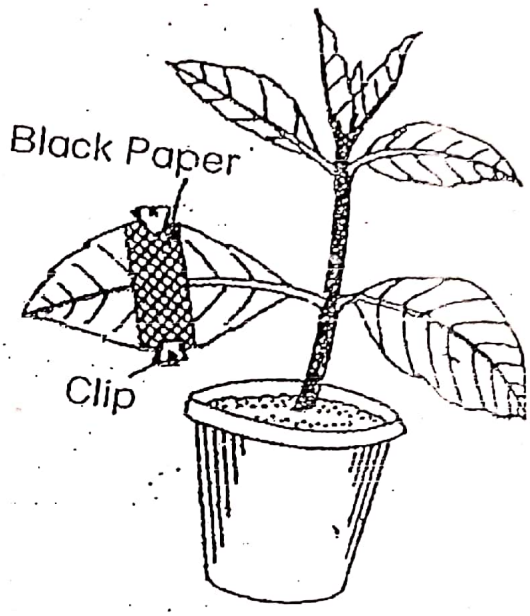
ion 5



[5 MARKS]

1. What is the aim of the given experiment?
2. Give your observation and the reason for your observation at the end of the experiment.
3. What are the steps followed to test for the presence of starch (with reasons)?
4. Give the overall equation for the above physiological process demonstrated.
5. In which spectrum of light does maximum photosynthesis occur?

b. Give the difference between [5 MARKS]

1. Stroma and Stoma (location)
2. Australopithecus and Homo erectus (cranial capacity)
3. Iris and ciliary muscle (functions)
4. Gigantism and Acromegaly (symptoms)
5. Diabetes Mellitus and Diabetes Insipidus (cause)

Question 6

a. A pea plant having yellow round seeds is crossed with green wrinkled seeds. [5 MARKS]

1. Give the phenotype and genotype of the F1 generation of the offspring.
2. Mention the possible combination of gametes that can be obtained from F1 hybrid plant.
3. Explain the law pertaining to the above type of cross.
4. What is the phenotypic ratio of F2?
5. Mention phenotypes of all the offspring obtained in the F2.

b. Give the function or use of [5 MARKS]

1. Placenta
2. Adrenaline
3. Organ of Corti
4. Corpus callosum
5. Potometer

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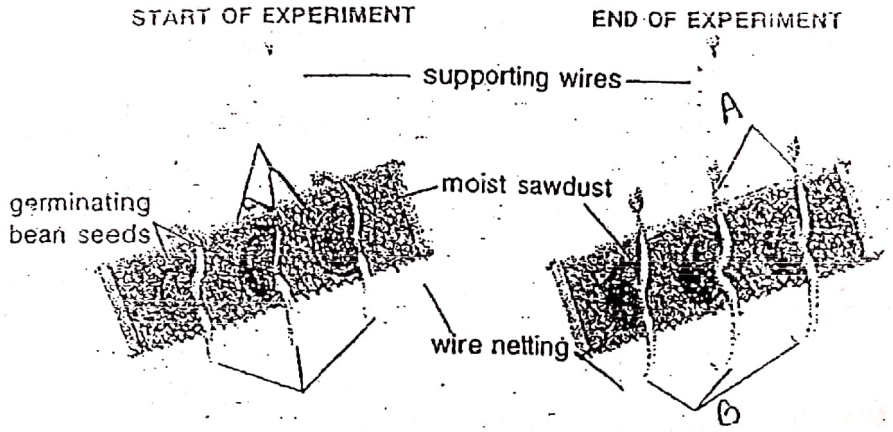
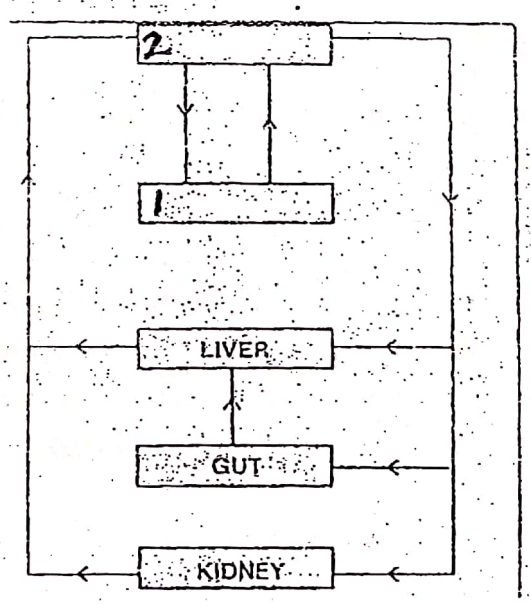
Question 7

a. [5 MARKS]



1. Define the tropism shown by the parts marked A and B in the given figure.
2. Name the tropic movement shown by the shoot and root.
3. What is the observation seen at the start and at the end of the experiment?
4. Explain the term tropic movement.
5. Give the full form of IAA and ABA.

b. [5 MARKS]



1. Identify the type of blood that goes to part 1 and blood vessels that enters part 2
2. Name the type of circulation between intestine and liver and give the peculiarity of the blood vessels between the two.
3. Why is the blood taken to the liver first before it enters into the main circulation?
4. Draw a neat labelled diagram of the blood vessel entering part 1.
5. What is the main component of the blood that leaves the liver?

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