GREENLAWNS HIGH SCHOOL

BIOLOGY PRELIMIMNARY EXAMINATION YEAR 2022-2023

STD 10 80 MARKS

Answers to this paper must be written on the paper provided separately.
You will not be allowed to write for the first 10 minutes, this time is to be spent in reading the question paper
This paper has 2 sections
Section A is compulsory. Solve all questions
Section B has 6 questions, solve any 4

SECTION A

(Attempt all questions from this section)

QUESTION 1

Select the correct answers to the questions from the given options (Do not copy the question. Write the correct answer only) (15)

i) Growth of pollen tube downwards through the style is due to

a) Chemotropism b) Phototropism c) Hydrotropism d) Thigmotropism

ii) The main cells in lymph are

a) R.B.C b) W.B.C c) Platelets d)Pathogen

iii) The photoreceptor cells of retina sensitive to colour

a) Cones b) Rods c) Organ of corti d) granule

iv) The most common gibberellins is

a) GA1 b) GA2 c) GA 3 d) GA7

v) The rate of photosynthesis is not affected by

a) light intensity b)humidity
c) temperature d) carbon dioxide concentration

vi) Hydathodes are present on

a) the upper surface
b) lower surface of the leaf
c) the tip of the veins of leaf
d) the base of the vein of leaf

vii) Marine fish when placed in tap water bursts because

a) endosmosis b) exosmosis c) diffusion d) imbibition

viii) The yellowing of leaves is due to deficiency of

a) Magnesium b) Sodium
c) Potassium d) Calcium

ix) genotypic ratio in monohybrid ratio in F_2 is

a) 1:1:1:1 b) 1:2 c) 3:1 d) 1:2:1

x) Normal blood pressure in an adult is

a) 120/80 b) 100/60 c) 150/100 d) 200/110

xi) No of chromosomes in a skin cell is

a) 46 b) 2 c) 22 d) 11

xii) Sperms become motile in

a) seminiferous tubule b) vas deferens

c) epididymis d) seminal vesicle

xiii) The observable traits of an organism are its

a) phenotype b) genotype c) pedigree d) allele

xiv) The acrosome of a sperm contains

a) hydrolytic enzyme b) DNA c) RNA d) Mitochondria

xv) Phenotypic ratio for dihybrid F2 generation is

a) 3:1 b) 4:0 c) 1:2:1 d) 9:3:3;1

QUESTION 2

i) Name the following (5)

a) An anti coagulant present in blood
b) Site for Hill reaction
c) Chemical which helps in diapedesis
d) A neurotransmitter
e) Process of production of sperm

ii) Arrange and rewrite the terms in each group in the correct order in a logical sequence beginning with the term that is underlined (5)

a) Ureter, urethra, pelvis, bladder, urethral sphincter
b) Dorsal Aorta, renal vein ,renal artery, capillary, inferior vena cava
c) Fallopian tube ,uterus, cervix ,vagina ,ovary
d) palisade parenchyma, cuticle, spongy parenchyma, stomata, upper epidermis
e) epididymis, testis, vas deferens, urethra ,accessory gland

iii) Match the items given in column I with the most appropriate ones in column II and rewrite the correct matching pairs (5)

COLUMN I	COLUMN II
a) Light phase	xylem
b) Dark phase	phloem
c) Centromere	photolysis of water
d) Sex chromosomes	glucose production
e) Ascent of sap	point of attachment between sister chromatids
	autosomes
	allosomes

iv) Choose the odd one out from the following terms and name the category to which the others belong (5)

a) CNS, PNS, SAN, SNS, ANS
b) Haemoglobin, prothrombin , fibrin, fibrinogen, thrombokinase
c) Vagina, vulva, ureter, ovary, uterus
d) Oxytocin, somatostatin, gonadotropic hormones, adrenocorticotropic hormone
e) Eating, coughing, breathing sneezing, blinking

v) State the exact location of the following structures (5)

a) Thyroid
b) Tear gland
c) Cowpers gland
d) Chlorophyll
e) Lenticels

SECTION B

(Attempt any 4 questions from this section)

QUESTION 3

(i) Define photosynthesis (1)
(ii) Give one difference between the following (2)

a) Oogenesis and ovulation (definition)

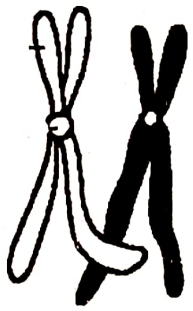
b) Gibberellins and Auxins (mode of action)

(iii) Give reason for the following (2)

a) Abscisic acid is known as a stress hormone
b) An egg can get fertilized by only one sperm

(iv) Draw a punnett square to find the genotypic and phenotypic ratio of F1 and F2 generations when a homozygous plant with red flowers is crossed with a homozygous plant with white flowers (2)

v) Drawn below is a diagram of a particular phase in a type of cell division (3)



a) Identify the type of cell division
b) Define the phase drawn above
c) What is the importance of this phase
d) Redraw the next stage

QUESTION 4

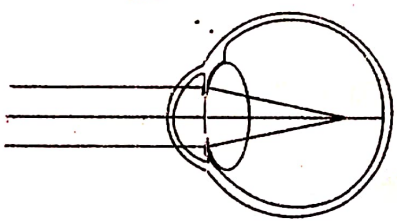
i) Define excretion (1)

ii) Name the 3 accessory glands in the male reproductive system, Give their common function (3)

iii) Give one functional difference between semi circular canal and vestibule (1)

iv) Give reasons (2)
a) Iodine rich food must be included in our diet
b) Ureters are slightly curved
c) Father is responsible for the gender of the child

v) Study the diagram drawn below and answer the questions that follow (3)



a) Identify the defect
b) List 2 reasons for this defect
c) Redraw the diagram to show its correction

QUESTION 5

i) Define Gestation (5)

ii) Give reason for the followimg

a) Justify why India has a large population (2 points)

b)Testies lie outside the body

iii) Describe 2 external factors that help increase the rate of photosynthesis (2)

iv) Give one function for each of the following (3)

a) stomata
b) Eustachian tube
c) Palisade parenchyma

v) Draw a neat well labeled diagram of the T.S. of a spinal nerve. Label any 4 parts (2)

QUESTION 6

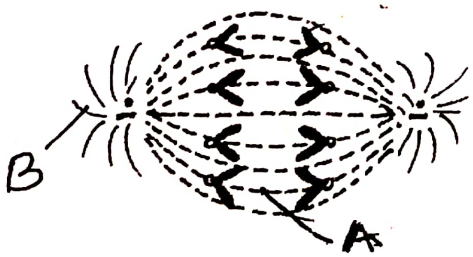
i) Define tropic hormones (1)

ii) Describe 2 features of roots that help it to absorb water (2)

iii) Name one disease due to under secretion and one disease due to over secretion of thyroxine. Remember to mention one symptom in each case (2)

iv) Explain astigmatism (1)

v) Drawn below is a diagram of the cell (3)



a) Identify the phase. Draw the prior phase.

b) Label parts A,B.Remember to give 2 change taking place in a.

c) Draw a neat well labeled diagram of a DNA strand .Label any 2 parts (1)

QUESTION 7

i) Define tropism (1)

ii) List 2 surgical methods for family planning (1)

iii) List 1 differences between (2)

a) Cone and Rods (pigment present)

b) Cushings syndrome and addisons disease (cause)

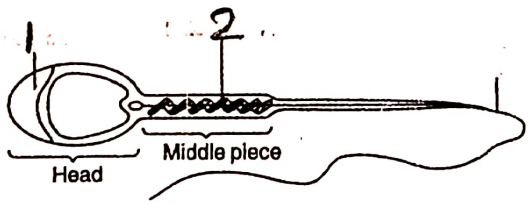
iv) Give reasons for the following (3)

a) Adrenaline is known as the emergency hormone

b) Females generally do not suffer from haemophilia

c) Insulin has to be injected into the body and not given orally

v) Drawn below is a diagram of the sperm. Study it and answer the questions that follow (3)



a) Identify parts 1,2,

b) The male reproductive system produces a large number of sperms, explain why

c) Define fertilization

QUESTION 8

i) Define Active Transport (1)

ii) Give differences between mitosis and meiosis on the basis of (1)

a) No of daughter cells produced
b) No of chromosomes present

iii) Give reason (2)

a) Arteries have thick walls.
b) The right kidney is slightly lower than the left kidney

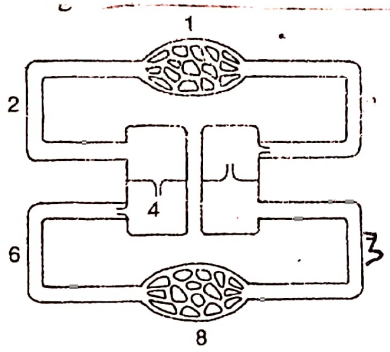
iv) Tea plants are never allowed to grow lengthwise. This is done by cutting their apical buds, a process known as pruning. In this way tea plants get a dense growth and easy yield. Answer the following questions (3)

a) Name the scientific phenomenon that is being overcome by pruning

b) What plant hormone is responsible for the scientific phenomenon mentioned in (a)

c) Name one plant hormone which inhibits the said phenomenon

v) Drawn below is a schematic representation of the heart. Blood vessel carries deoxygenated blood. (6) (3)



a) Identify parts 1,2,3,4

b) Give the function of SAN