City International School

FIRST PRELIMINARY EXAMINATION 2015 – 2016

Date : 04/12/2015 **Marks : 80**

Std : X **Subject : Biology (paper 3)** **Time :** 2 hrs

Answer to this paper must be written on the paper provided separately.
You will not be allowed to write during the first 15 minutes.
This time is to be spent in reading the question paper.
The time given at the head of this paper is the time allowed for writing the answer.
Section A is compulsory. Attempt any four questions from section B.
The intended marks for questions or parts of questions are given in brackets ( )

SECTION I (40 Marks)
Attempt all questions from this Section

Q. 1 a. Name the following: **(5)**

i. The internal layer of the eye that prevents reflection of light.
ii. Shrinkage of protoplasm when a cell is kept in a hypertonic solution.
iii. The process by which WBCs engulf bacteria.
iv. The endocrine cells present in pancreas.
v. The tubular knot fitting like a cap on the upper-side of the male gonads.

b. Identify the odd one in each set and name the category to which the remaining three belong: **(5)**

i. Sacculus, Utriculus, Ampulla, Pinna.
ii. Fibrin, Prothrombin, Platelets, Vitamin A.
iii. Cobalt 60, Iodine 131, No_2, X-rays.
iv. Curly hair, Normal vision, Tongue rolling, Ability to speak.
v. Spinal cord, Dendron, Axon, Myelin sheath.

c. Choose the correct answer from the options given below: **(5)**

i. Which of the following is not a semi-permeable membrane?
A. Cellophane paper B. Animal bladder
C. Muslin cloth D. Visking bag

ii. The acrosome of a sperm contains :
A. Hydrolytic enzymes B. Mitochondria
C. DNA D. RNA

iii. In human there are:
A. 31 pairs of cranial nerves B. 31 pairs of spinal nerves
C. 12 pairs of spinal nerves D. 21 pairs of spinal nerves

iv. Parts of cells associated with the formation of spindle fibres are:

A. Microtubules B. Golgi bodies
C. Microbodies D. Centrioles

v. A disorder caused by hypo-secretion from adrenal cortex:

A. Addison`s disease B. Cushing`s syndrome
C. Adrenal virilism D. Giganstism

d. State the main function of the following: **(5)**

i. Chlorophyll. ii. Urethra in males.
iii. Cochlea iv. Tricuspid valve.
v. Amnion.

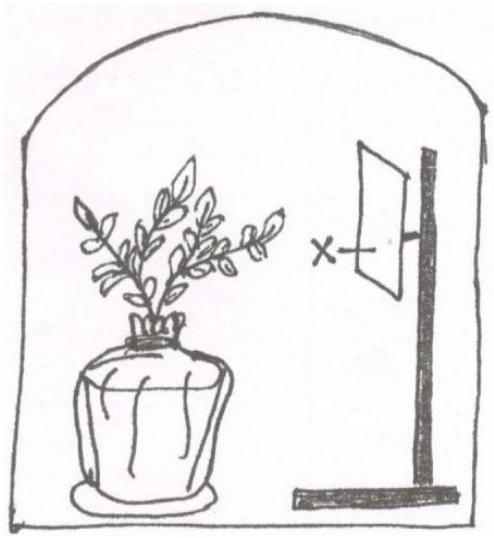
e. The figure given below represents an experimental set-up to study a particular process in plants. The experimental set-up was placed in bright sunlight. Study the diagram and answer the following questions: **(5)**

i. Define the above mentioned process.

ii. Why is the pot covered with a polythene bag?

iii. What change would you observe in 'X' after a while? Give reasons to justify your observation.

iv. Mention any one way by which the plants tend to reduce the above defined process in (i).



f. State the exact location of the following: **(5)**

i. Lenticels ii. Cornea iii. Pituitary gland
iv. Oviducts v. Cerebellum

g. Copy and complete the following by filling in the blanks 1 to 5 with appropriate words: **(5)**

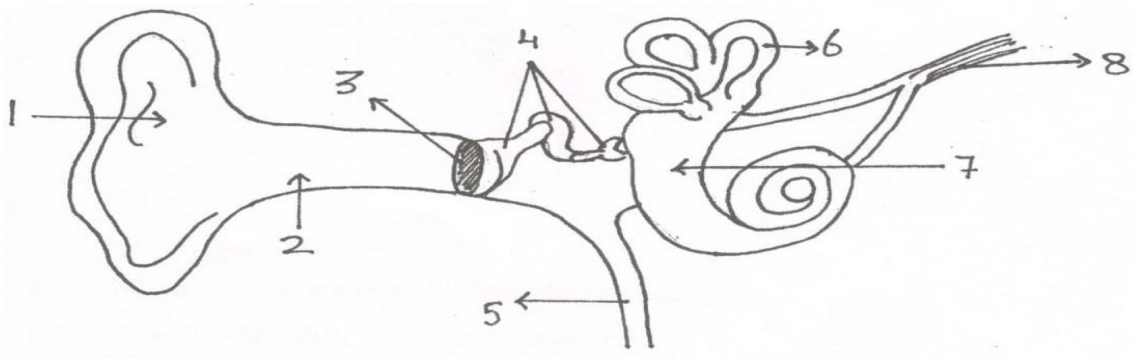
The vital plant green pigments are present in…….(1). The interior of these organelles contain closely packed flattened sacs called……(2). They are arranged in piles called……(3) lying in a colorless ground substance called……(4). This organelles are mainly contained in the……(5) cells located between the upper and the lower :

h. Match the items given in Column A with the most appropriate ones in Column B and rewrite the correct matching pairs from Column A and Column B:

Sr. No.	Column A	Column B	
1.	LUBB	a.	Diabetes mellitus
2.	Acid rain	b.	Accessory reproductive part
3.	Haemophilia	c.	Atrio-ventricular valves
4.	Prostate gland	d.	O_3 and O
5.	Vasopressin	e.	Y-linked inheritance
		f.	SO_2 and oxides of nitrogen
		g.	Diabetes insipidus
		h.	Primary reproductive part
		i.	Semicircular valves
		j.	X-linked inheritance

SECTION II (40 Marks)
Attempt any four questions from this section.

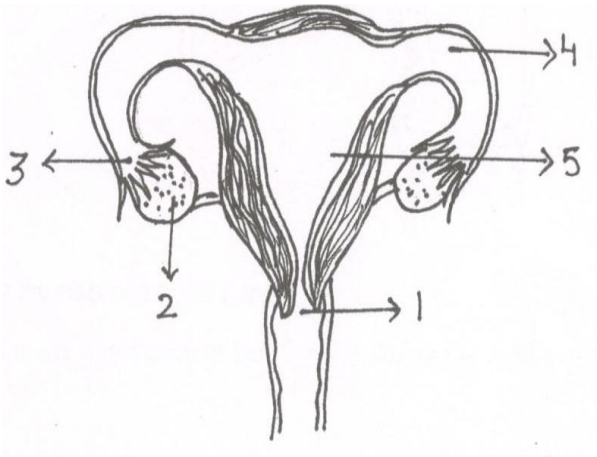
Q. 2 a. The diagram given below is of the human ear. Study the same and then answer the questions: **(5)**



i. Lable the parts 1 and 2.
ii. State the function of the parts labeled 4 and 8.
iii. Give the technical term for the parts labeled 3 and 4.
iv. Name the audio receptor cells which pick up vibrations.
v. Name the part labeled above which is responsible for:
   1. Equalizes atmospheric pressure and pressure in the ear.
   2. Dynamic equilibrium.
vi. Why is it harmful to use a sharp object to remove the wax from ear?

b. Give scientific reasons for the following statements: **(5)**
i. Chromosome number is restored in sexual reproduction.
ii. Sudden death occurs if medulla oblongata is injured.
iii. We should treat the sewage before throwing into the river.
iv. Some people cannot see distant objects.
v. Glucose is normally not found in urine.

Q. 3 a. Given below is a diagram of the female reproductive system of a human being. **(5)** Study the same and answer the questions that follow:



i. Label the parts 1, 2, 3 and 4.

ii. Where are the sperms released during coitus?

iii. State the function of the part number 5.

iv. Draw a well labeled diagram of a haploid cell that is released by the structure 2.

v. Name the menstrual phase during which the follicle ruptures.

vi. Name the hormone secreted by the follicle prior to ovulation.

b. Differentiate between the following pairs on the basis of what is mentioned within brackets: **(5)**

i. Atrial systole and Ventricular systole (valves that are closed).

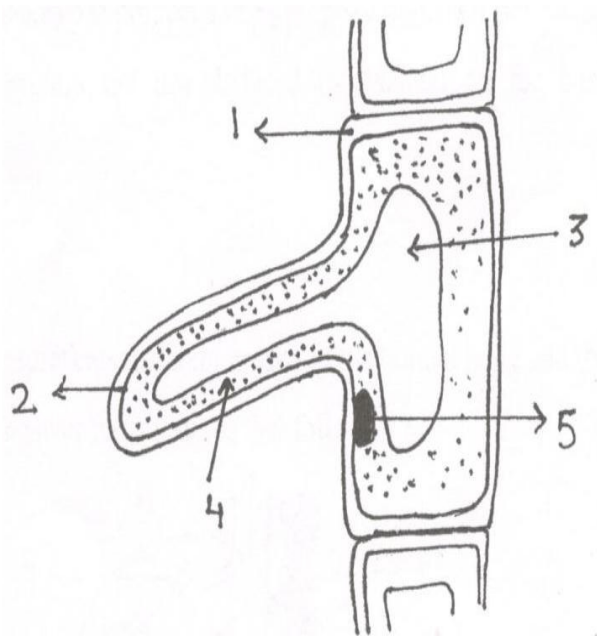
ii. Mortality and Natality (Define).

iii. Seminiferous tubules and seminal vesicles (Function).

iv. Fraternal twins and Identical twins (Explain).

v. Sympathetic Nervous system and Parasympathetic Nervous syste (Effects on pupil of the eye)

Q. 4 a. The given figure represents a layer of epidermal cells showing a fully grown root hair. Study the diagram and answer the questions that follow: **(5)**



i. Name the parts numbered 1 and 4.

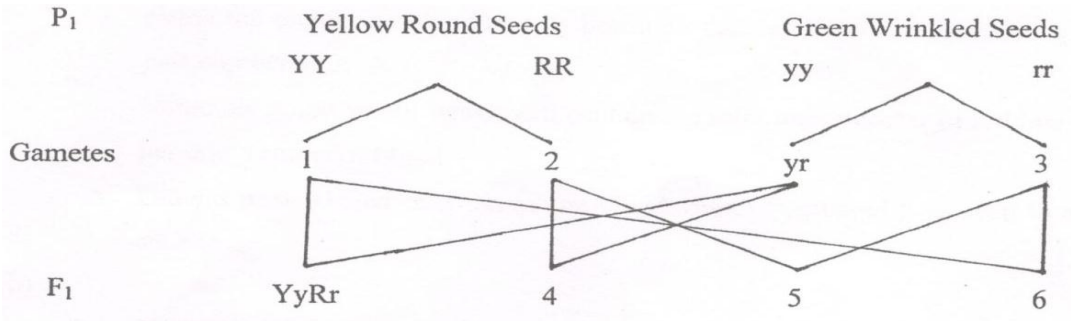
ii. What is the importance of part 2 and 3 during the uptake of water into the root hair?

iii. What would happen if living cells of a plant were placed in a strong solution of cane sugar and them in water?

iv. Draw a well labeled diagram of a living cell of a plant as it would appear when placed in a strong solution of cane sugar.

v. Explain why weeds can be killed by adding salt to it.

b. Given below is a schematic diagram showing Mendel`s experiment on sweet pea plants with yellow round seed (YYRR) and green wrinkled seeds (yyrr). Answer the following questions: **(5)**



i. Fill in the blanks numbered 1 and 5.

ii. Give the phenotypes of F_1 progency.

iii. Give the F_2 phenotypic ratio.

iv. Name the phenotypes in F_2 progeny upon self pollination of F_1 progeny.

v. Name and explain the law deduced by Mendel on the basis of the above observation.

Q. 5 a. The diagram below represents different organs of the human body and their blood supply. Study the same and answer the questions that follow: **(5)**

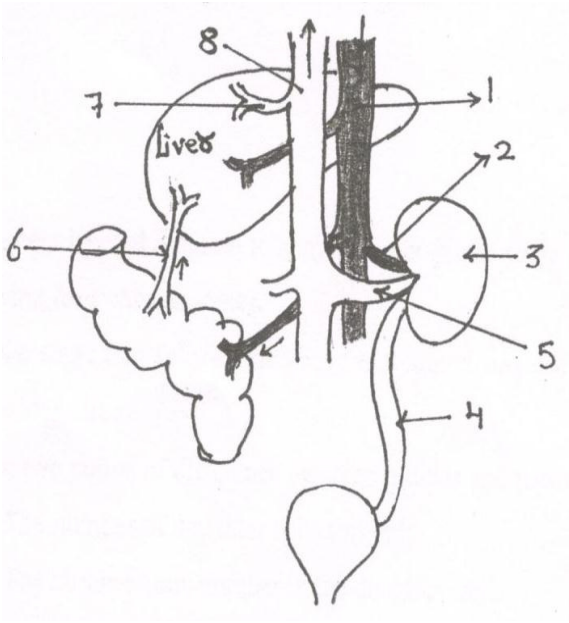
i. Name the blood vessels labelled 6 and 8.

ii. State the function of the parts labelled 3and 4.

iii. Name the endocrine gland and its hormone that regulates the functioning of the part numbered 3.

iv. Name the blood vessel which will contain the minimum number of red blood cells per unit volume of blood.

v. Draw a neat labeled diagram of the blood vessel numbered 5 as seen in a cross section.



b. i. Expand the following biological abbreviations: **(5)**
1. FSH 2. NADP

ii. Name any one vaccine and mention the disease against which it gives immunity.

iii. Complete the following:

Name of the gland / Tissues	Substance produced	One important function
Corpus luteum	1. _____	2. _____
3. _____	Thyroxine	4. _____
5. _____	Tears	6. _____

Q. 6 a. i. Draw a neat labeled diagram to show the metaphase stage of mitosis in an animal cell having four chromosomes. **(5)**

ii. Name the stage that follows the above mentioned stage of mitosis. How can this stage be identified?

iii. Mention two points of difference between mitosis with regard to:
1. The number of daughter cells formed.
2. The chromosome number in the daughter cells.

iv. Name the type of cell division that occurs during.
1. Growth of shoot.
2. Formation of pollen grains.
3. Repair of worn out tissues.

b. Briefly explain the following terms: **(5)**

i. Reflex action. ii. Photolysis of water.

iii. Implantation. iv. Antitoxin.

v. Eutrophication.

Q. 7 a. i. Draw a neat labeled diagram to show the rectification of short sightedness defect and label the following parts : (Fovea, Optic nerve, Vitreous humour) **(5)**

ii. Write any 2 disadvantages of large families.

iii. State 2 functions of WHO.

b. Give technical terms for the following: **(5)**

i. The structure of the kidney where glomerulus is enclosed.

ii. Ability of the eye lens to change the focal length according to the distance of the object.

iii. Division of cytoplasm.

iv. A chemical released by basophils for inflammation that dilates blood vessels.

v. The structure that connects the two cerebral hemisphere of the brain.

vi. The anterior cavity of the eye in front of the lens.

vii. Transmission of genetically based characteristics from parents to offspring.

viii. The process of formation of female gemetes.

ix. Removal of plant sap through an injured part of a plant.

x. The pressure created in the cortical cells of roots.