

City International School

FIRST TERMINAL EXAMINATION – 2013 - 2014

Date : 01/08/2013

Marks : 80

Std : X

Subject : Biology (Paper III)

Time : 2hrs

Answer to this question must be written on the paper provided separately.

You will not be allowed to write during the first 15 minutes.

This time is spent in reading the question paper.

The time at the head of this paper is the time allowed for writing the answers.

Attempt all questions from SECTION A and four questions from SECTION B.

The intended marks for questions or parts of questions are given in the bracket. ()

SECTION A [40 MARKS]

Attempt all questions

Question 1

- a. Name the following. (5)
- The pressure which facilitates entry of water into root hairs.
 - Cells surrounding the stoma.
 - Artery carrying deoxygenated blood to the lungs.
 - The fluid present in the meninges.
 - The tissue which transports starch from leaves all parts of plants.
- b. Define. (5)
- | | | |
|-------------------|-------------------|----------------|
| i. Osmosis | ii. Guttation | iii. Excretion |
| iv. Reflex action | v. Photosynthesis | |
- c. Choose the most appropriate option in the following statements. (5)
- Which of these is responsible for dynamic equilibrium of the body?

| | |
|-------------|------------------------|
| 1. Cochlea | 2. Utriculus |
| 3. Sacculus | 4. Semicircular canals |
 - Concentration of which of these substances is increased in the urine of a diabetic patient?

| | |
|------------|----------------|
| 1. Urea | 2. Uric acid |
| 3. Glucose | 4. Amino acids |
 - Which artery supplies blood to the cardiac muscles?

| | |
|---------------------|--------------------|
| 1. Pulmonary artery | 2. Corotid artery |
| 3. Aorta | 4. Coronary artery |
 - Transpiration will be fastest when the day is.

| | |
|--------------------------|-------------------------|
| 1. Cool, humid and windy | 2. Hot, humid and still |
| 3. Hot, humid and windy | 4. Hot, dry and windy |

- v. Which of these solutions has the highest water potential?
- | | |
|---------------|-----------------------|
| 1. Pure water | 2. 10% salt solution |
| 3. Honey | 4. 50% sugar solution |

d. Fill in the blanks . (5)

- i. _____ transport does not need energy.
- ii. Transpiration creates a _____ pull in xylem.
- iii. Stroma is ground substance in _____.
- iv. _____ is also known as the pacemaker.
- v. There are 12 pairs of _____ nerves.

e. State whether the following statements are True (T) or False (F). (5)

If false, rewrite the correct statement by changing the first or last word only.

- i. Dilation of the pupil is brought about by the sympathetic nervous system.
- ii. Centriole is an organelle of the cell that initiates cell division.
- iii. All voluntary actions are controlled by the cerebrum.
- iv. Iron is the mineral element responsible for the clotting of blood.
- v. Soaking seeds in water bursts the seed coat.

f. Given below is a table consisting of a set of items belonging to a common category. (5)
Complete the table by filling in the category and the odd one in the blanks.

- i. Vacuole, Ribosome, Mitochondria, Centrosome
- ii. Coughing, Sneezing, Eating, Blinking
- iii. Heart, Vein, Trachea, Artery
- iv. Retina, Auditory nerves, Iris, Ciliary Muscles
- v. Stoma, Chloroplast, Lenticels, Grana

g. Match the following. (5)

- | Column I | Column II |
|--------------------|-------------------------|
| i. Xylem | 1. Semi – permeable |
| ii. Phloem | 2. Permeable |
| iii. Cell membrane | 3. Downward flow of sap |
| iv. Root pressure | 4. Upward flow of sap |
| v. Cell wall | 5. Guttation |

h. Give the biological / technical term for the following. (5)

- i. An eye defect in which the cornea becomes uneven.
- ii. Inflammation of meninges.
- iii. Loss of water through a cut stem.
- iv. The cell organelle responsible for photosynthesis.
- v. The tube which connects the cavity of the middle ear with the throat.

SECTION B [40 MARKS]

Attempt any four questions from this section.

Question 2

- a. Study the alongside diagram carefully and then answer the questions that below: (5)
- Name the parts labelled 1
 - Identify the phenomenon occurring in A
 - Mention two structural Differences between 1 and 2
 - Name the process occurring in B and C and state the importance of this process in the human body
- b. Study the diagram given alongside and then answer the questions that follow. (5)
- Name the region in the kidney where this structure is present.
 - Name the parts labelled 1, 2, 3 and 4
 - Name the stages involved in the formation of urine.
 - What is the technical term given to process occurring in 2 and 3? Briefly describe the process.

Question 3

- a. Given the alongside is a diagram depicting a defect of the human eye. Study the same and then answer the questions that follow. (5)
- Identify the defect.
 - Name the parts labelled 1, 2 and 3
 - Give two possible reasons for this eye defect.
 - Draw a labelled diagram to show how the above mentioned defect is rectified.
- b. Complete the following by filling the blanks. (5)
- Photosynthesis involves light reacting and dark reaction. During light reaction; the chlorophyll present in the ____ (1) ____ gets activated by absorbing light energy. This energy splits ____ (2) ____ molecules to produce ____ (3) ____ and oxygen and releases two electrons. The process is called ____ (4) _____. The ____ (5) ____ ions are picked by NADP to from ____ (6) _____. The ADP is converted to ____ (7) _____. This process is called ____ (8) _____. During the dark phase, the compound produced at the end of light reaction reacts with carbon dioxide to from ____ (9) _____. This product is converted to starch. This process is called ____ (10) _____.

Question 4

a. The figure given below are cross sections of blood vessels.

(5)

- i. Identify the blood vessel A, B and C.
- ii. Name the parts labelled 1 – 4.
- iii. Mention two structural differences between A and B
- iv. In which of the above vessel referred to in (a) does exchange of gases actually take place?

b. Study the diagram given alongside and answer the questions that follow.

(5)

- i. Name the process being studied in the above experiment.
- ii. Explain the process mentioned in (i) above.
- iii. Why oil placed over water?
- iv. What do we observe with regard to the level of water when this set up is placed in
 1. Humid condition
 2. Windy day.
- v. Mention any three adaptations found in plants to overcome the process mentioned in (ii) above.

Question 5

a. Complete the following.

(5)

- i. A plasmolysed cell has _____ protoplasm.
- ii. Raisins swells up when kept in a _____ solution.
- iii. _____ is an example of semi - permeable membrane.
- iv. Leaves gets wilted if _____ removed from the plant.
- iv. The pressure which develops in the cortical cells of root which force a part of the water upward is _____
- vi. _____ is a solution whose concentration is greater than cell sap.
- vii. _____ helps in the opening of stomata.
- viii. The condition opposite to turgid is _____.
- ix. Recovery of protoplasm when a cell is kept in a hypotonic solution is _____.
- x. The root hair is _____ cellular.

b. State one main function of the following.

(5)

- i. Hypothalamus
- ii. Eustachian tube
- iii. Optic nerve

Question 6

- a. Given below is the figure of certain organ and its associated parts. (5)
Study the same and then answer the questions that follow.
- Name all the organs systems shown completely or even partially
 - Name the parts numbered 1 to 5. as seen in a cross section.
 - Name the structural and functional unit of the part marked 1.
 - Name the two main organic constituents of the fluid that flows down the part labelled '3'.
- b. The diagram below represents an experiment conducted to prove the importance (5)
of a factor in photosynthesis. Study the same and then answer the questions that follow.
- Name the factor being studied in the experiment.
 - Why was the plant kept in a dark room before conducting experiment?
 - Why was the experimental leaf kept in
 - Boiling water
 - Methylated spirit
 - Name the solution used to test for presence of starch in the leaf.
 - What will we observe in the experimental leaf at the end of the starch test?
 - Give a balanced chemical equation to represent to represent the process of photosynthesis.

Question 7

- a. Answer the following questions. (5)
- Wilted lettuce leaves become crisp if kept in cold water. Give reason.
 - State any two limitations of potometer.
 - Fresh water fish cannot survive in sea water. Give reason.
 - Give any two functions of WHO.
 - Urination is more frequent during winters as compare to summers.
- b. Give one point of difference between the following pairs on the basis of (5)
What is indicated in brackets?
- Rod and cone cells (pigment).
 - Light reaction and Dark reaction (site of occurrence).
 - Cerebrum and spinal cord (Arrangement of cytons and axons of neurons).
 - Sympathetic nervous system and Parasympathetic nervous system (Function).
 - NADD and SAN (expand the abbreviations)