

City International School

FIRST TERMINAL EXAMINATION – 2015 - 2016

Date : 07/08/2015

Std : X

Subject : Biology (Paper III)

Marks : 80

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. ()

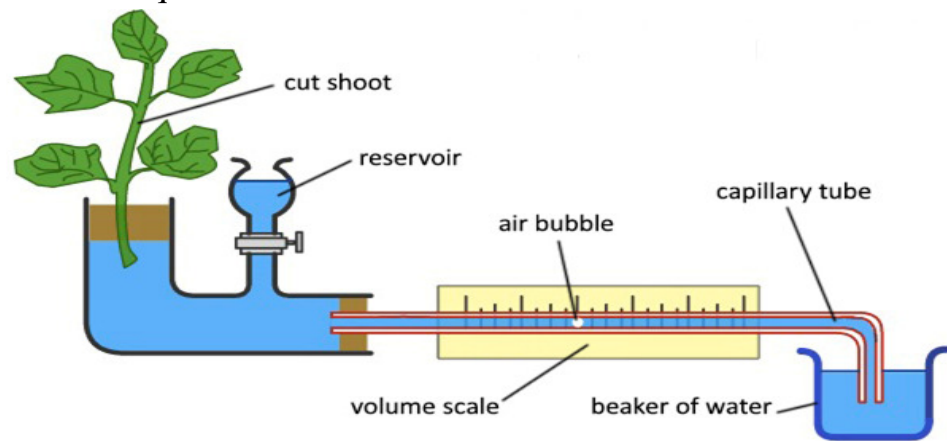
SECTION A [40 MARKS]

Attempt all questions.

Question 1

- a. Name the following. (5)
- A neurotransmitter.
 - The process of uptake of mineral ions against the concentration gradient using energy from cell.
 - The vein that carries oxygenated blood.
 - The process by which white blood cell engulf bacteria.
 - The part of the brain which is concerned with memory.
- b. Define. (5)
- | | | |
|---------------|---------------------|-----------------------------|
| i. Pulse | ii. Turgor pressure | iii. Selective reabsorption |
| iv. Excretion | v. Guttation | |
- c. Given below are five sets with four terms each. In each set one term is odd. (5)
Choose the odd one out of the following terms given and name the category to which the other belong.
- Sneezing, Coughing, Blinking, Typing
 - Tympanum, Macula, Cochlea, Utriculus
 - Basophil, Neutrophil, Eosinophil, Lymphocyte
 - Pleura, Pericardium, Meninges, Spinal cord
 - Cochlea, Rod cells, Cone cells, Yellow spot
- d. Mention the exact location of the following structures. (5)
- | | | |
|--------------------|--------------------|--------------------|
| i. Lenticels | ii. Bicuspid valve | iii. Loop of Henle |
| iv. Organ of Corti | v. Pacemaker | |

- e. Given below is an apparatus used to study a particular process in plants. Study the same and answer questions that follow. (5)



- i. Name the apparatus.
 - ii. Mention one limitation of this apparatus.
 - iii. Which phenomenon is studied with the help of this apparatus?
 - iv. What is the function of the part marked 'reservoir'?
 - v. What is the role of the air bubble in the experiment?
- f. Given below are five sets of terms. In each case, arrange and rewrite each set so as to be in logical sequence. (5)
- i. Tympanum, stapes, malleus, incus, fenestra ovalis
 - ii. Soil water, root hair, xylem, cortex, endodermis
 - iii. Association neuron, effector, motor neuron, receptor, sensory neuron
 - iv. Lens, pupil, conjunctiva, yellow spot, cornea
 - v. Stoma, Mesophyll cells, xylem, substomatal space, intercellular space
- g. Given below is an example of certain structure and its special functional activity. On a similar pattern fill in the blanks with suitable functions. (5)
- Example: Chloroplast and Photosynthesis.
- i. Xylem and _____
 - ii. Ciliary Body and _____
 - iii. Hydathodes and _____
 - iv. Capillary and _____
 - v. Chrodae tendena and _____
- h. Give the technical term: (5)
- i. The pressure responsible for the movement of water molecules across the cortical cells of the roots.
 - ii. Plasma devoid of fibrinogen.
 - iii. The loss of water from injured parts of a plant.
 - iv. An abnormal increase in the number lymphocyte.
 - v. Outermost tough fibrous membrane of the meninges.

SECTION B [40 MARKS]

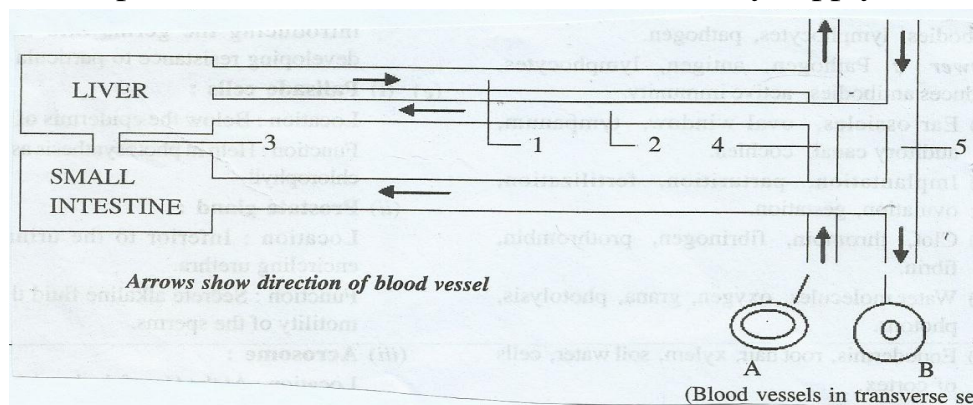
Attempt any four questions from this section.

Question 2

- a. i. Draw a neat and labeled diagram of a Neuron showing the following parts: Perikaryon, Dendrites, Axon, Node of Ranvier and Myelin sheath. (5)
- ii. State the function of sensory neuron and a motor neuron.
- iii. What is nerve made up of?
- b. Differentiate between the following pairs on the basis of what is mentioned within brackets: (5)
- i. Diffusion and Imbibition (Definition)
- ii. RBC and WBC (Shape)
- iii. Rods and Cones of Retina (Type of pigment)
- iv. Transpiration and Guttation (Definition)
- v. Cobalt chloride paper and Goat's Bladder (where it is used)

Question 3

- a. The figure below represents the liver of a mammal and its body supply. (5)

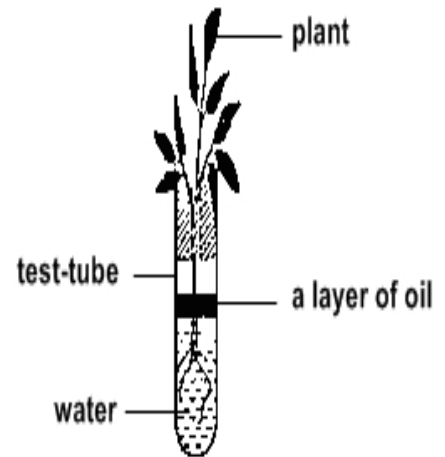


- i. Name the blood vessels 1, 2, 3, 4 and 5.
- ii. About 2 hours after a meal which blood vessel would be loaded with food material in solution?
- iii. Why does blood vessel 3 join small intestine to liver?
- iv. Name the three layers of which the wall of A and B is made up of?
- b. Name the following. (5)
- i. A membrane that allows passage of molecules selectively.
- ii. Structure that carries visual stimuli from retina to brain.
- iii. Protective coverings located around the human brain and spinal cord.
- iv. Eye lens losing flexibility resulting in a kind of long sightedness.
- v. International organization which supports projects for research on diseases.
- vi. Openings on the stem through which transpiration occurs.
- vii. The duct which transports urine from kidney to the urinary bladder.
- viii. Condition of a cell placed in hypotonic solution.
- ix. The junction between two nerve cells.
- x. The process of passing out urine from the body.

Question 4

a. Study the diagram given below and then answer the questions that follow: (5)

- Name the process being studied in the following experiment.
- Explain the process mentioned in (i) above.
- Why is oil placed in water?
- What do we observe with regard to the level of Water when this set up is placed in
 - bright sunlight
 - humid conditions
 - windy day?
- Mention any three adaptations found in plants to overcome the process mentioned in (ii) above.



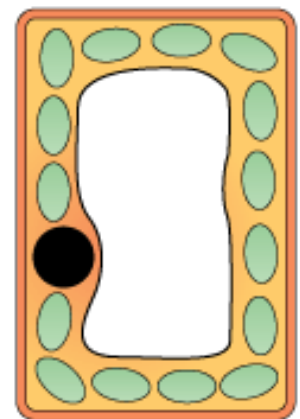
b. State the function of: (5)

- Auditory nerve
- Cerebrospinal fluid
- Aortic semilunar valve
- Collecting duct
- Eustachian tube

Question 5

a. The figure given below shows the epidermal cells of an onion bulb. This cell was then transferred to a drop of sugar solution. (5)

- Draw a well labelled diagram of the epidermal cell as it would appear after immersion in a strong sugar solution.
- What scientific term is used for the changes as shown in (i) above?
- What should be done to restore the cell back to its original condition?
- Give the scientific term for the recovery of the cell as a result of the step taken in above.
- Define the term osmosis.



b. Account for the following facts: (5)

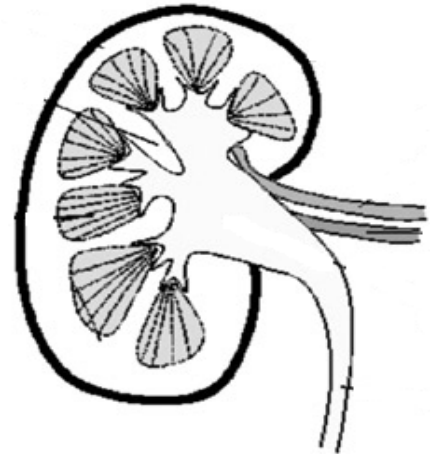
- Fresh water fish cannot survive in sea water.
- A well watered potted plant shows wilting of leaves on hot sunny day.
- A matured mammalian erythrocytes lacks nucleus and mitochondria.
- Injury to medulla oblongata results in sudden death.
- Deficiency of ADH causes diabetes insipidus.

Question 6

a. The diagrams given below show a section of a human kidney. Study the diagram carefully and answer the questions that follow.

(5)

- Label the parts numbered 1 to 4.
- Why does part '2' have a striped appearance?
- What is the fluid that passes down part '4'? Name the main nitrogenous waste present in it.
- Mention the structural and functional units of kidneys.
- Name the two major steps in the formation of the fluid mentioned in Q. 5 (a) (iii).



b. Explain the following.

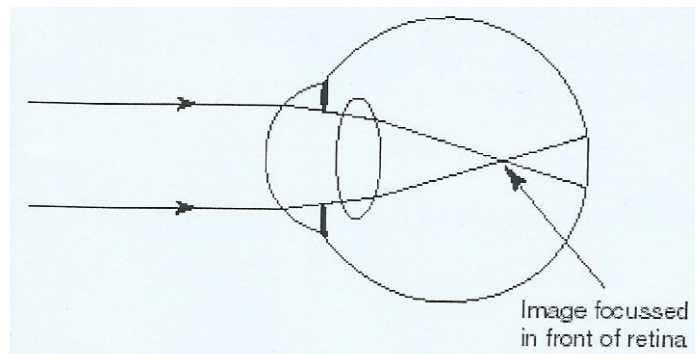
(5)

- Double circulation
- Ultrafiltration
- Stereoscopic vision
- Power of Accommodation of the eye
- Osmotic pressure

Question 7

a. The diagram given below shows a vertical section of human eye:

(5)



- Label the parts numbered 1 to 4.
- What is the function of part labeled 2?
- Name the defect shown in the diagram.
- Give a possible reason for this defect.
- What lens is used to correct this defect?
- The power of glasses used is mentioned in plus or minus for this defect.

b. Answer the following questions.

(5)

- State any two functions of the World Health Organization.
- State two ways in which roots are suited for absorbing water.
- The outer portion of the brain appears grey while inner portion white.
- List two advantages of transpiration to a plant.
- Expand SAN.