# Quarterly Examination 2017-2018

**Std. : X** **Full Marks : 80**

**Subject : Biology** **Time : 2hrs.+15min.**

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## Section 'A' (40 marks)

**(Attempt all questions)**

**Q1. A. Name the following :—** **[5]**

(i) A vein that starts with capillaries and ends with capillaries.

(ii) A solution whose concentration is greater than the cell sap.

(iii) The complex consisting of DNA strand and a core of histones.

(iv) The two devices commonly used in India as Intra Ulterine Devices.

(v) The organelle concerned with storage of water.

**B. The following paragraph is related to absorption of water from the soil. Copy and complete the paragraph by selecting the correct word from those given in the box. You may use the term only once.** **[5]**

**Endosmosis, hypertonic, osmosis, isotonic, hypotonic, cortical, exosmosis.**

Water enters the root hair from the soil by the process of _____. This is because the solution in the soil is _____ where as the cell sap in the root hair cell is _____. The water then passes through the _____ cells by cell to cell _____ and reaches the xylem of the roots.

**C. Define the following :** **[5]**

(i) Tubectomy (ii) Guttation (iii) Genes (iv) Diastole (v) Pulse.

**D. State the difference between the following terms.** **[5]**

(i) Pulmonary artery and Pulmonary Vein. (nature of blood)

(ii) Turgidity and Flaccidity (definition)

(iii) Leucoplasts and Chloroplast (colour of pigment)

(iv) RBC and WBC (structure)

(v) Birth Rate and Death Rate (definition)

**E. Answer the following :—** **[3+1+1]**

(i) Enumerate the steps of blood clotting.

(ii) What is serum ?

(iii) State two functions of lymph.

**F.** The diagram below represents a layer of epidermal cells showing a fully grown root hair. Study the diagram and answer the following questions.

(i) Name the parts labelled A,B,C, & D. [2]

(ii) The root hair cell is in a turgid state. Name and explain the process that caused the state. [½]

(iii) Mention one distinct difference between parts 'A' & 'B'. [1]

(iv) Draw a diagram of the above root hair cell as it would appear when a concentrated solution of fertilisers is added near it. [1½]

(iv) Is the cell given above a plant or an animal cell ? Give two reasons to support your answer as evident from the diagram. [1]

v) What would you do to bring this cell back to its original condition ? [1]

**G. State the exact location of the following :— [5]**

(i) Pulmonary semilunar value.

(ii) Fricuspid value.

(iii) Centrosome

(iv) SA Node

(v) Spleen

**H. Write the chief functional activity of each of the following :— [5]**

(i) Bone Marrow

(ii) Coronary arteries

(iii) Root hair

(iv) Chromatin fibres

(v) Cell wall

**Section 'B' (40 marks)**

**(Attempt any 4 questions)**

**Q2. A. The figure shows an experiment set up of a certain phenomenon in plants :**

(i) What is the aim of the experiment. [1½]

(ii) What is the purpose of taking boiled potato. [1½]

(iii) Mention one biological importance of this physical process to each of the following. [2]

(i) Animals (ii) Plants

**Q2. b. Give scientific reasons :— [5]**

(i) The wooden frames of doors gets jammed in rainy season.

(ii) If you sprinkle some common salt on grass growing on on a lawn, it is killed at the spot.

(iii) The walls of the left ventricle are thicker than the walls of all chambers.

(iv) The arteries are deep seated in the body.

(v) Rapid increase of population in India.

**Q3. a. Given alongside is a diagrammatic representation of a certain part of the process of circulation of blood in man. Study the same and then answer the given question :- [5]**

(i) Name the parts labelled 1,2,4 & 6.

(ii) Give the number and name of the vessel which contains the maximum amount of urea a few hours after a protein rich meal.

(iii) Draw a neat labelled diagram of the cross sectional view of the blood vessel numbered 3.

(iv) Mention two structural differences between blood vessel '3' & '8'.

**b. Answer the following :—**

(i) List 3 factors which have led to rise in the world population. [3]

(ii) What do you mean by 'double circulation' ? [1]

(iii) What are nucleosomes ? [1]

**Q4. a. Given below is a diagrammatic sketch of a certain system in human body. [5]**

(i) Name the system.

(ii) Name the parts labelled A,B,C & D.

(iii) Part 'E' represents a contraceptive device. What happens due to this device ?

(iv) Name the contraceptive method that could be applied in part 'B' ?

(v) In the method named (iv) is it required to be performed on both side on just one side is enough? Give reason.

**b. Differentiate between :—** **[1+3+1]**

(i) Turgor Pressure and Wall Pressure (1 pt)

(ii) Mitosis and Meiosis (3 pts)

(iii) Chromosome & chromatid (1 pt)

**Q.5. a) The diagram shows a certain state during cell division. Study the same and answer the questions :-** **[5]**

(i) Name the parts labelled 1,2 & 3.

(ii) Identify the given state and give reason in support.

(iii) Mention where in the body this type of cell division occurs.

(iv) Name the stage prior to this and draw a diagram to represent same.

**b) Answer the following :—**

(i) Give two example of turgor movements in plants. [2]

(ii) Why is is necessary to know the blood group before transfusion ? [2]

(iii) Lysosome are termed suicidal bags of cell. [1]

**Q.6. a) Name the following :—** **[5]**

(i) The process by which water enters the root hairs.

(ii) The condition of a cell placed in a hypotonic solution.

(iii) The statistical study of human population of a region.

(iv) The pressure responsible for guttation.

(v) The full form of MTP.

**b) Given below is the schematic diagram of a portion of DNA —**

(i) How many strands it is showing ?

(ii) How many nucleotides have been shown in each strand ?

(iii) Name the DNA units constituted by the parts 1, 2 & 3. respectively.

(iv) Name the parts numbered 1, 2, 3, 4 & 5 ?