

- v. Draw a well labelled diagram of the root hair cell as it would appear if an excess of fertilizer is added to the soil close to it.

- Q6. b. Given below is a portion from the human body showing some important structure in ventral (front) view.



- i. Name the endocrine gland and its secretion ( $\frac{1}{2} + \frac{1}{2}$ )
- ii. Label the structure numbered 1-3. ( $1\frac{1}{2}$ )
- iii. Name the mineral element required for the synthesis of the above mentioned hormone. ( $\frac{1}{2}$ )
- iv. Name the disease caused due to undersecretion and hypersecretion of the above mentioned hormone. (1)
- v. Give one function of each of part 1 and part 3 (1)

## Quarterly Examination - 2018-19

### BIOLOGY

Class : X

Time : 2 Hrs. + 15 mts

Full Marks : 80

#### Section A (40 Marks)

Attempt all questions

- Q1. a) Name the following: (5)
- (i) The wax like layer on the epidermis of leaves which reduces transpiration.
  - (ii) The blood vessel which supplies blood to the liver.
  - (iii) A solution whose concentration is greater than the cell sap.
  - (iv) The complex structure consisting of DNA strand and a core of histones.
  - (v) The vein in which urea concentration is maximum.
- b) Tick the correct answer from each of the four options given below and rewrite the complete sentence: (5)
- (i) Cretinism is caused due to
 

a) Hyperthyroidism	b) hypothyroidism
c) Isothyroidism	d) none of the above
  - (ii) The death rate of population of a country is called
 

a) Birth rate	b) Mortality
c) Sterility	d) Natality
  - (iii) The process of meiosis takes place to produce
 

a) Cells of the body	b) Cells of the brain
c) Sperms and ova	d) Testis and ovary

- iv) The number of daughter cells formed at the end of meiosis from a cell are
- a) 2 haploid cells            b) 2 diploid cells  
c) 4 haploid cells            d) 4 diploid cells
- (iv) The escape of sap from the cut or ruptured parts of the plant is called
- a) Guttation                    b) Transpiration  
c) Bleeding                    d) Clotting
- c) Complete the following paragraph by filling in the blanks (i) to (v) with the appropriate words (5)

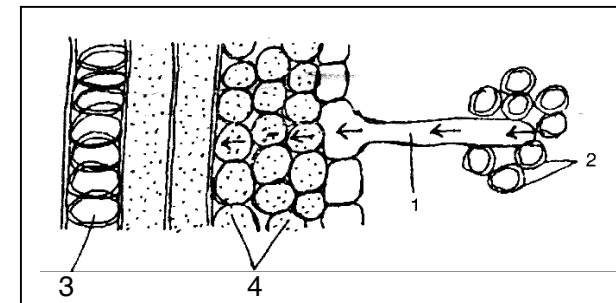
The heart is protected by a double membranous covering called \_\_\_\_\_. The auricles are connected to the ventricles by auriculo-ventricular apertures. The left aperture has a \_\_\_\_\_ and the right aperture has a \_\_\_\_\_. The flaps of these valves are held by \_\_\_\_\_. The openings of the ventricles into the arteries have \_\_\_\_\_ to prevent the backward flow of blood.

- d) Match the items in column A with the most appropriate one in column B and rewrite the correct pairs; (5)

Column A	Column B
(i) Increase in heart beat	a) Antidiuretic hormone
(ii) Ossification of bones	b) Thyroxin
(iii) Regulates basal metabolism	c) glucagon
(iv) Converting glycogen to glucose	d) Adrenaline
(v) Increased reabsorption of water in the kidneys	e) insulin
	f) Gonadotropins
	g) calcitonin

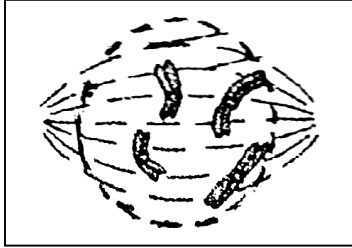
- i. Name the apparatus
- ii. What is used for?
- iii. What is the role played by the air bubble in this experiment?
- iv. What is the use of the reservoir?
- v. What happens to the movement of the air-bubble if the apparatus is kept.
- 1) in the dark –
- 2) in the sunlight –
- 3) in the front of a fan? Give a reason in each case

- A6. a. The figure given below is a diagrammatic representation of a part of the cross section of the root in the root hair zone. Study the same and then answer the questions that follow : (5)



- i. Name the parts indicated by the guidelines 1 to 4
- ii. Which is the process that enables the passage of water from the soil into the root hair?
- iii. Name the pressure that is responsible for the movement of water in the direction indicated by the arrows. Define it.
- iv. Due to an excess of this pressure sometimes drops of water are found along the leaf margins of some plants especially in the early mornings. What is the phenomenon called?

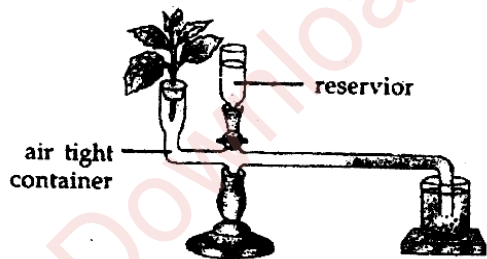
- b) Given below is diagram representing a stage during mitotic cell division. Study it carefully and the answer the question the follows:- (5)



- (i) It is a plant cell or an animal cell? Give a reason to support your answer,
- (ii) Identify the stage shown.
- (iii) Name the stage that follows one shown here. How is that stage identified?
- (iv) How will you differentiate between mitosis and meiosis on the basis of the chromosome number in the daughter cells?
- (v) Draw a duplicated chromosome and label its parts.

Q5. a. Answer in brief :

- i. Write any two major reasons for the population explosion in the world. (2)
  - ii. What is osmoregulation? (1)
  - iii. Give the full forms of MTP, ADH (2)
- b. The diagram given below as an apparatus to study a particular phenomenon in plants. ( $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + 3$ )



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- e) Correct the following statements by changing the underlined words. (5)
  - i. Ultra filtration takes place in the Bowman's capsule.
  - ii. Raisins swell up when placed in a beaker of water due to Imbibition.
  - iii. Tubectomy is the surgical method of sterilization in males.
  - iv. Beta cells of the pancreas secrete aldosterone
  - v. Diapedesis is the process by which leucocytes, engulf and destroy bacteria.
- f) Choose the odd one out from the following terms (5) and name the category to which the others belong;
  - i) Aorta, pulmonary artery, Renal artery, dorsal aorta
  - ii) Bile, urea, uric acid ammonia
  - iii) Pancreas, thyroid, salivary glands, pituitary
  - iv) Centrosome, cell wall, cell membrane, large vacuoles.
  - v) Root hair, unicellular, epidermal outgrowth, multicellular.
- g) Define the following : (5)
 

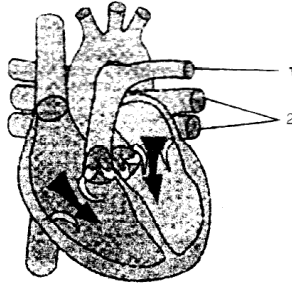
i) Centromere	iv) Ultrafiltration
ii) Osmotic pressure	v) Resource
iii) Portal vein	
- h) State the exact location of the following: (5)
  - i) Chloroplast
  - ii) Pulmonary semilunar valve
  - iii) Adrenal gland
  - iv) Thyroid gland
  - v) SA node

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Section B (40 marks)

(Attempt any 4 questions)

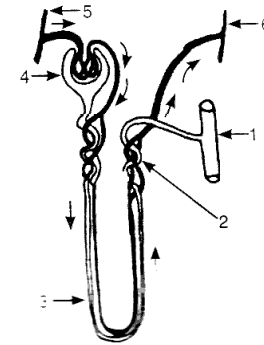
- Q2 a. The diagram given below represents a section of the human heart. Answer the questions that follow :



- i. Which parts of heart are in the diastolic phase? Give a reason to support your answer.
  - ii. Label the parts numbered 1 and 2 in the diagram. What type of blood flows through them?
  - iii. What causes the heart sounds LUBB and 'DUP'?
  - iv. Name the blood vessels that supply oxygenated blood to the heart muscles.
  - v. Draw neat labelled diagrams of a cross section of an artery and a vein. (5)
- b. Give scientific reasons : (5)
- i. The wooden frames of doors gets jammed in rainy season.
  - ii. The walls of the left ventricle are thicker than the walls of all chambers.
  - iii. Rapid increase of population in India.
  - iv. The arteries are deep seated in the body.
  - v. If you sprinkle some common salt on grass growing on in a lawn, it is killed at the spot.

- Q3. a. Answer the following in brief :

- i. Lysosomes are termed suicidal bags of cells. (1)
  - ii. Why is it necessary to know the blood group before transfusion? (1)
  - iii. Give two examples of turgor movements in plants (1)
  - iv. Give the full forms of IUDs, ACTH (2)
- b. The given diagram represents a nephron and its blood supply. Study the diagram and answer the following questions:



- i. Label parts 1, 2, 3 and 4.
  - ii. State the reason for high hydrostatic pressure in the glomerulus.
  - iii. Name the blood vessel which contains the least amount of urea in this diagram.
  - iv. Name the two main stages of urine formation.
  - v. Name the part of the nephron which lies in the renal medulla. (5)
- Q4. Differentiate between: (1+3+1)
- i. Osmosis and diffusion (definition)
  - ii. Mitosis and Meiosis (any three)
  - iii. Chromosome and chromatid