MARTHOMA RESIDENTIAL SCHOOL, THIRUVALLA
FIRST TERMINAL EXAMINATION 2019-2020
BIOLOGY

STD: X

Time: 2Hrs
Marks: 80

SECTION I (40 marks)

Question I

a. Name the following. (5)

1. The structure where photophosphorylation takes place.
2. The exchange of chromatid parts between the maternal and the paternal chromatids of a pair of homologus chromosome during meiosis.
3. The process by which leucocytes engulf and destroy bacteria
4. The organ that produces urea.
5. The muscles responsible for keeping the chordae tendinae in position.

b. State whether the following statements are true or false. If false rewrite the correct statement by changing the first or last word only. (5)

1. Respiration is the only biological process in which oxygen is produced.
2. Iron is the mineral element responsible for the clotting of blood.
3. Duplicated chromosomes remain attached at a point termed centrosome.
4. The number of pairs of autosomes in man is 22.
5. The resting phase in mitosis is called interphase.

c. Rewrite and complete the following sentences by inserting the correct word in the space indicated (5)

1. Phenotype is the observable characteristics which is _____controlled
2. Wooden doors swell up in rainy season due to_____.
3. The blood vessel that begins and ends in capillaries is the_____.
4. _____is the phenomenon of contraction of the cytoplasm from the cell wall.
5. _____is the pigment present in urine.

(5)

d. Write the function of the following.

1. Neutrophils
2. Thylakoid.
3. Coronary artery
4. Chordae tendinae
5. Sphincter muscles in urethra. (5)

e. State the exact location of the following.

1. Monocytes
2. Spleen.
3. Pulmonary semilunar valve.
4. Centromere
5. Chordae tendinae

f. Given below are five groups of terms. In each group arrange and rewrite the terms in the correct order so as to be in logical sequence. (5)

1. Urea in blood, collecting tubule, glomerulus, distal convoluted tubule, urine.
2. Aorta, hepatic vein, hepatic portal vein, stomach, liver.
3. Destarched plant, iodine added, washed in water, a leaf boiled in alchohol, placed in sunlight.
4. Telophase, interphase, anaphase, prophase, metaphase.
5. Fibrin, platelets, thromboplastin, fibrinogen, thrombin.

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

SET	CATEGORY	ODD ONE
1.Cell wall, large vacuole, plastids, centrosome		
2. Haemophilia, colour blindness, albinism, night blindness.		
3. Phosphate, RNA, sugar, Nitrogenous base.		
4. Ammonia, bile, urea, uric acid.		
5. Transpiration, Phagocytosis, Photosynthesis, Guttation.		

h. Match the following and rewrite in pairs. (5)

1. Pace maker
2. Stroma
3. Potometer
4. Mutation
5. Clotting of blood

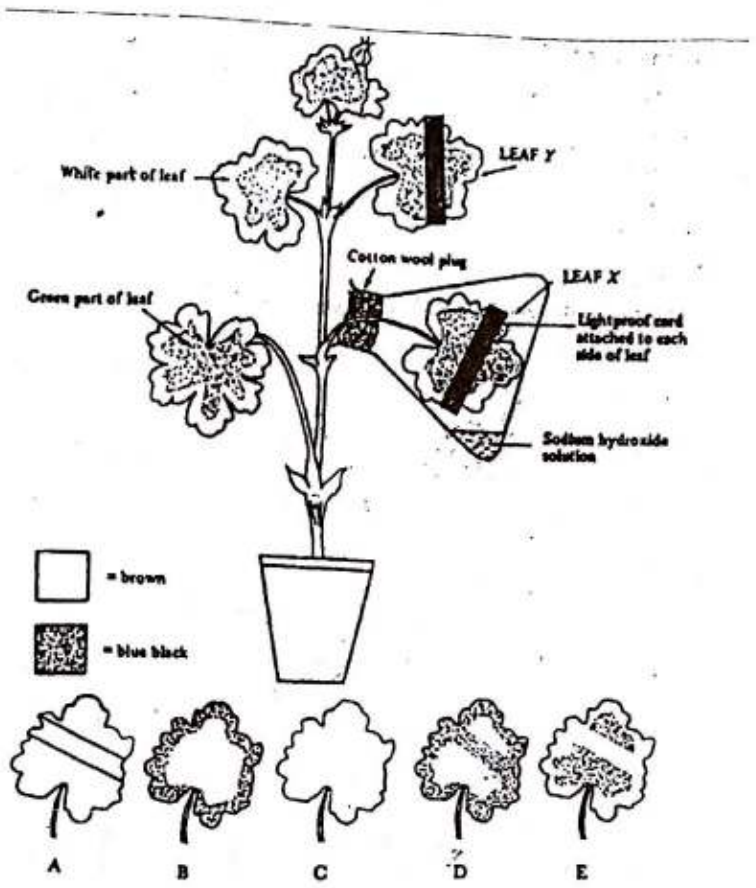
chordate tendinae
Sudden change in gene
SA Node
Site of dark reaction
Site of light reaction
Transpiration
Phoyosynthesis
Alleles
Vitamin K
Vitamin E

SECTION 2 (40 marks)

Question 2

a. A well watered potted plant with variegated leaves was kept in darkness for about 24 hours. It was then set up as shown in the diagram and exposed to light for about 12 hours. At the end of this time, leaf X and leaf Y were tested for starch. Study the diagram and answer the questions that follow:

(5)



1. Why the plant was initially kept in darkness for 24 hours?
2. What is the function of sodium hydroxide solution in the flask?
3. Select the correct leaf from the five available choices shown in the diagram as A, B, C, D and E.Rewrite the correct answer by filling in the appropriate letter for the questions that follow:
    a After the starch test, leaf X would look like _____.
    b After the starch test, leaf Y would look like _____.
4. The experiment with leaf Y shows that photosynthesis requires the presence of certain factors. Mention any two factors.
5. Give any one example for variegated leaf.
6. Mention any one control for leaf X.

b. (5)

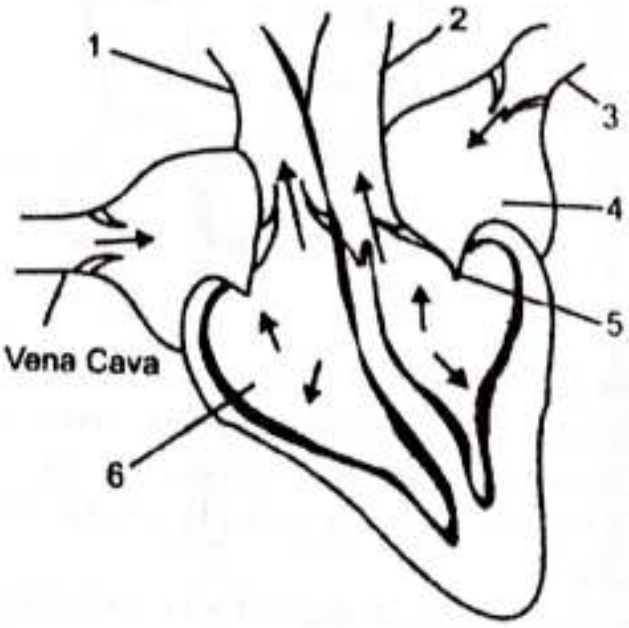
1. Draw a well labelled diagram of malphigian capsule.
2. Briefly describe the formation of glomerular filtrate.
3. Explain osmoregulation.
4. Name the components of urine.

Question 3

a. Potato cubes 1 cm^3 in size were placed in three containers namely A, B and C, container A containing water, container B containing concentrated sugar solution and the container C containing same concentration as that of cell sap. After about 24 hours when the cubes were examined, those placed in A were found to be firm and had increased in size by a few millimetres. Those placed in B were found to be soft and had decreased in size and the one placed in C remain unchanged. Use the above information to answer the questions that follow.

1. Account for the firmness and increase in size of the potato cubes which were placed in container A.
2. Account for the softness and decrease in size of the potato cubes which were placed in container B.
3. Why the potato cubes placed in container C remain unchanged?
4. Name the solution taken in containers A, B and C.
5. Name and define the physical process being investigated in this experiment.

b. The diagram given below represents the human heart in one phase of its activity. Study the same and answer the questions that follow :-



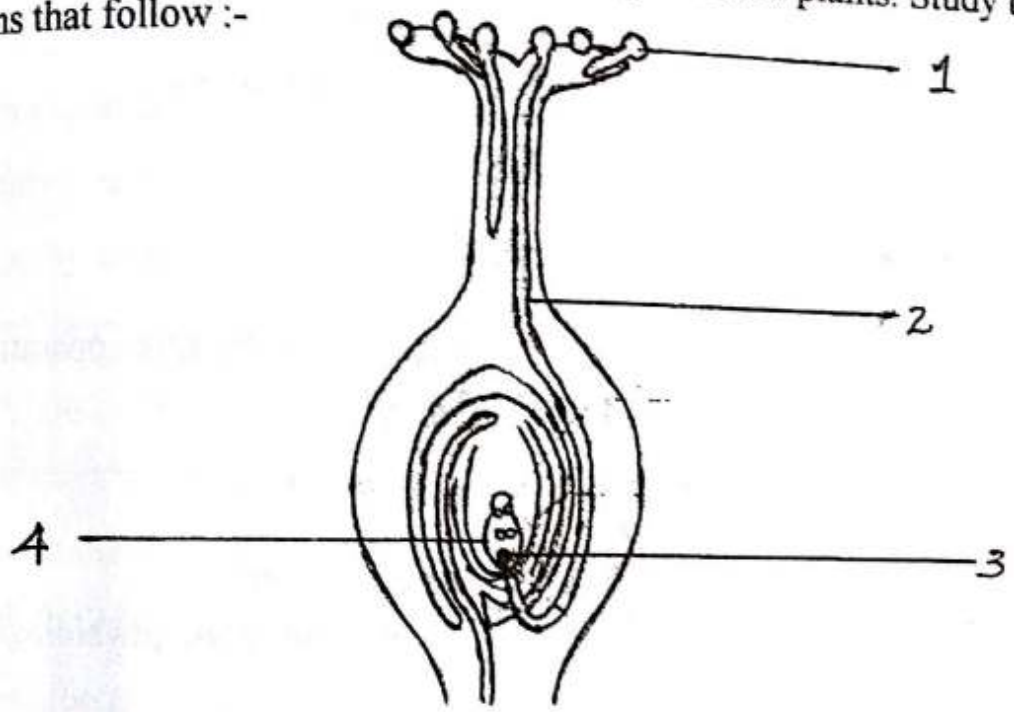
1. Name the phase.
2. Label the parts 1-6.
3. Which parts of the heart are contracting in this phase? Give a reason to support your answer.
4. Draw well labelled diagrams of part 2 and 3 to show the structural differences between them.
5. What type of blood flows through the parts marked '1' and '2'?

Question 7

a. Differentiate the following on the basis of what is given in brackets. (5)

1. Ureter and urethra(function)
2. Blood plasma and serum(composition)
3. Red blood cells and white blood cells(origin)
4. Lymphocytes and Neutrophils (structure of nucleus)
5. Beginning of ventricular systole and ventricular diastole (Type of heart sound)

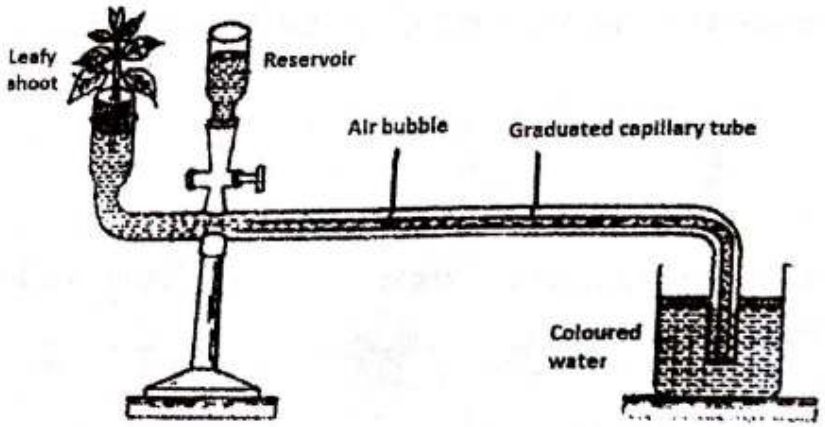
b. The diagram given below represents a certain process in plants. Study the same and answer the questions that follow :- (5)



1. Name the tropic movement shown in the diagram.
2. Label the parts 1-4
3. Part labelled 2 is affected by a stimulus. Name it.
4. Define the tropic movement.
5. Give another example of the same type of tropic movement.
6. What is meant by positive and negative movement?

Question 5

a. Given below is an experimental set up to demonstrate a particular process in plants. S the same and answer the questions that follow:



1. Name the apparatus. Which phenomenon is demonstrated by this apparatus?
2. Explain the process mentioned in 2 above.
3. What is the aim of the above experiment?
4. State two limitations of using this apparatus.
5. What is the importance of the air bubble in the experiment?
6. Mention any three adaptations found in plants to overcome the physiological proces mentioned in (1) above.

b. Give reasons for the following. (5)

1. Xerophytes have their leaves modified to spines or reduced in size.
2. Erythrocytes are biconcave discs and lack mitochondria and endoplasmic reticulum.
3. Green leaves are thin and broad.
4. Abscissic acid is known as stress hormone.
5. Urine is slightly thicker in summer than in winter.