FIRST TERMINAL EXAMINATION 2017-2018
BIOLOGY

STD: X

Time: 2Hrs
Marks: 80

SECTION I (40 marks)

Question I

a. Name the following. (8)

1. The vitamin responsible for blood clotting.
2. The protective membrane of heart.
3. The process by which leucocytes engulf and destroy bacteria.
4. The pressure exerted by cell contents on a plant cell.
5. A fluid that transport fatty acid and glycerol.
6. The genetic constitution of an organism.
7. The vein which drains the blood from the intestine to liver.
8. The muscles responsible for keeping the chordae tendinae in position.

b. Define the following. (5)

1. Active transport.
2. Diffusion.
3. Diapedasis.
4. Pulse.
5. Photolysis.

c. Differentiate the following based on what is given in brackets. (5)

1. Blood plasma and serum.(composition).
2. Human neuron and Human ovum (number of chromosomes)
3. LUBB & DUB (names of the valves whose closure produce the sound)
4. Dominant and recessive allele(Definition)
5. Cobalt chloride paper and Goat's bladder (process where it is used)

d. Write the function of the following. (4

1. Platelets
2. Lymphocytes of blood.
3. Coronary artery
4. Chordae tendinae

e. State the exact location of the following. (4)

1. Mitral valve.
2. Spleen.
3. Hydatodes.
4. Centromere

f. (6)

1. Draw a neat and labelled diagram of the experimental set up to show that green plants give out oxygen during photosynthesis.
2. What happens if green light is provided instead of white light for photosynthesis?
3. Mention two ways in which photosynthesis differs from respiration.

g. Given below is a table consisting of a set of items belonging to a common (8) category. Complete the table by filling the category and the odd one in the blanks.

SET	CATEGORY	ODD ONE
1.Eosnophil,Basophil,Monocyte Neutrophil		
2. Mitral valve, Sino atrial node, Aorta, Pulmonary vein.		
3. Phosphate, RNA, sugar, Nitrogenous base.		
4.Fewer stomata, Thick cuticle, Sunken stomata, Broad leaves		

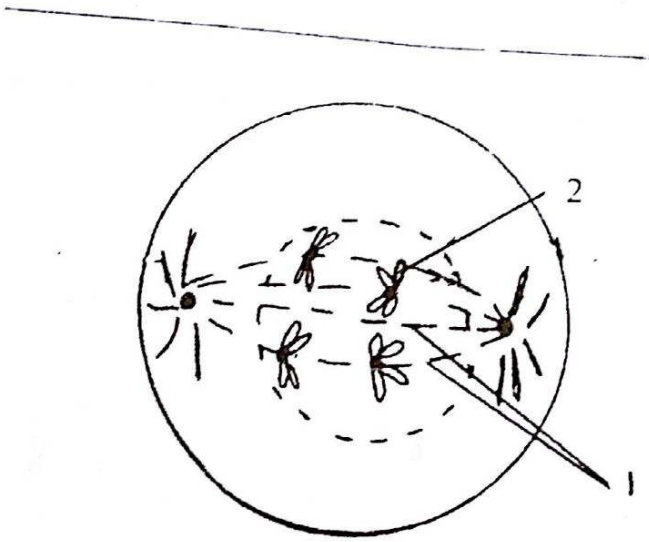
SECTION 2 (40 marks)

Question 2

a) In a homozygous pea plant, axial flowers(A) are dominant over terminal flowers(a)

1. What is the phenotype and genotype of the plants of F_1 generation if a plant bearing pure axial flowers is crossed with a plant bearing pure terminal flowers (5)
2. Draw a punnett square board to show the gametes and offsprings when both the parent plants are heterozygous for axial flowers.
3. What is the phenotypic ratio and genotypic ratio of the above cross shown in (2)?
4. State the Mendel's law of Dominance.
5. Name two genetic disorders commonly seen in human males.

b) The diagram below represents a stage during cell division. Study the same and answer the questions that follow. **(5)**

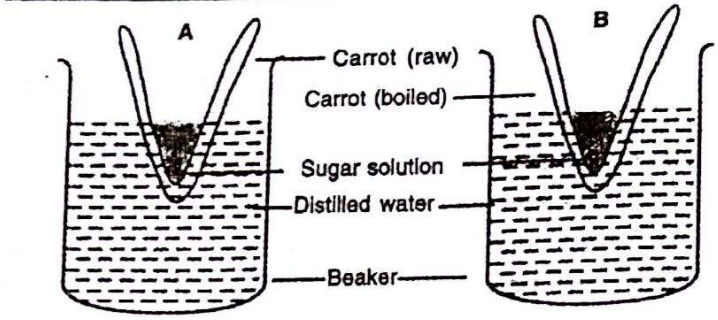


1. Name the parts numbered 1-2.
2. Identify the above stage and give reason to support your answer.
3. Name the stage that follow this stage and draw a diagram to represent the same.
4. Is this an animal cell or plant cell? Give reasons to support your answer.
5. Mention two points of difference between `mitosis' and `meiosis' with regar to:-
    a The number of daughter cells formed.
    b The chromosome number in the daughter cells.

Question 3

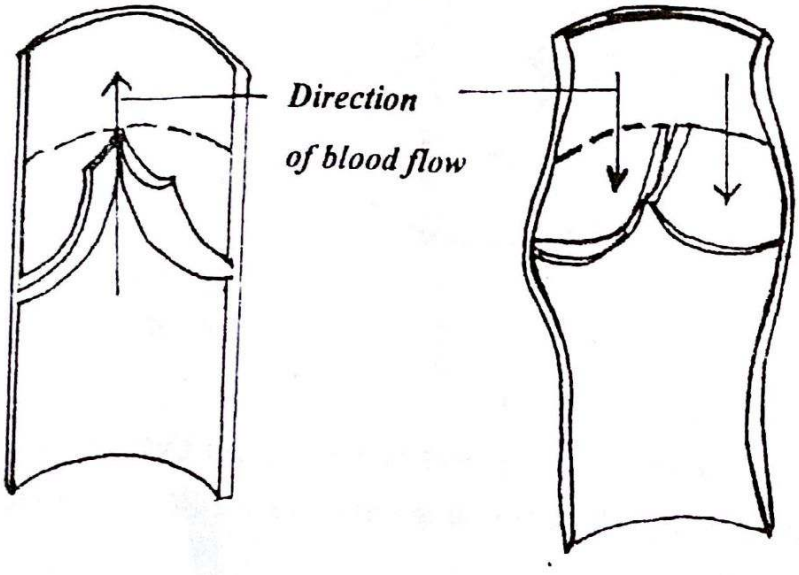
a. The figure represents an experiment to demonstrate osmosis by carrot osmoscope. Study the same and answer the questions that follow.

(5)



1. What will happen in A and B after an hour?
2. Give reasons for the difference in observations made in A and B.
3. What is the solution inside the cavity of the carrot `A'?
4. What would happen if in `A' dilute sugar solution was placed inside the cavity the carrot and strong sugar solution was kept in the beaker?

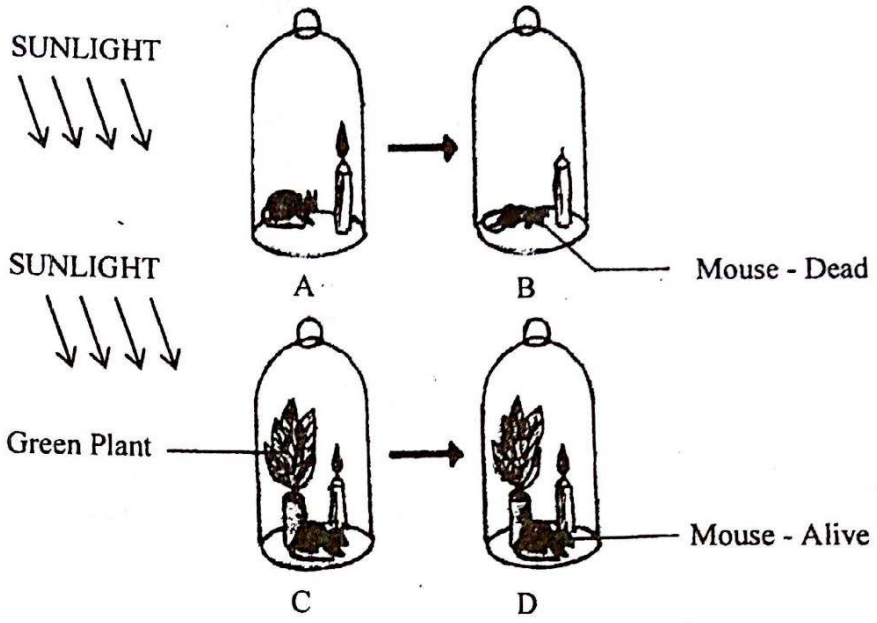
b. The diagram given below represents a certain category of blood vessels showing the role of a special structure in their walls: -



1. Name the kind of blood vessels shown.
2. Name the structure shown inside the blood vessels.
3. Describe the role of these structures.
4. Are these structures present in any other kind of blood vessel? If so, name it.
5. Towards which side of the figure (top or bottom) is the heart located

uestion 4

a. **The diagrams given below represent the relationship between a mouse and a physiological process that occurs in green plants. Study the same and answer the questions that follow.** **(5)**



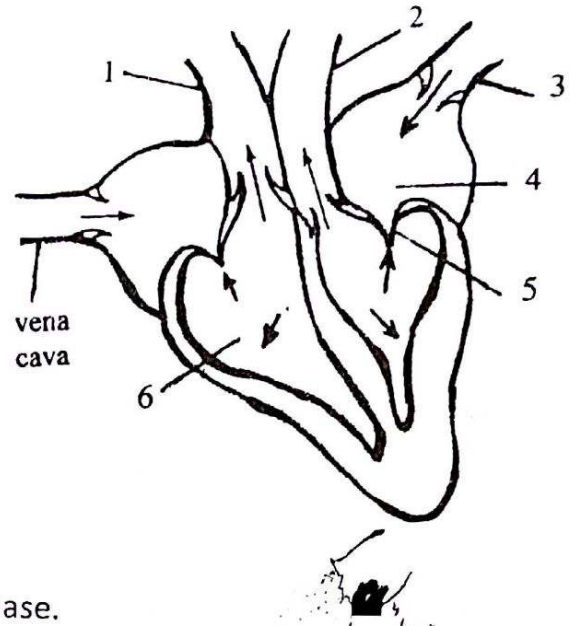
1. Name the physiological process occurring in the green plant that has kept the mouse alive.
2. Explain the physiological process mentioned above.
3. Why did the mouse die in bell jar B?
4. What is the significance of the process as stated in (1) for life on earth?
5. Represent the above mentioned physiological process in the form of a chemical equation.

b. Give reasons for the following. **(5)**

1. Fresh water fish cannot survive in sea water.
2. Erythrocytes are biconcave discs and lack mitochondria and endoplasmic reticulum.
3. Gametes have haploid number of chromosomes.
4. The left ventricle of the heart has a thicker wall than the right ventricle.
5. Wooden frames of doors get jammed during the monsoon season.

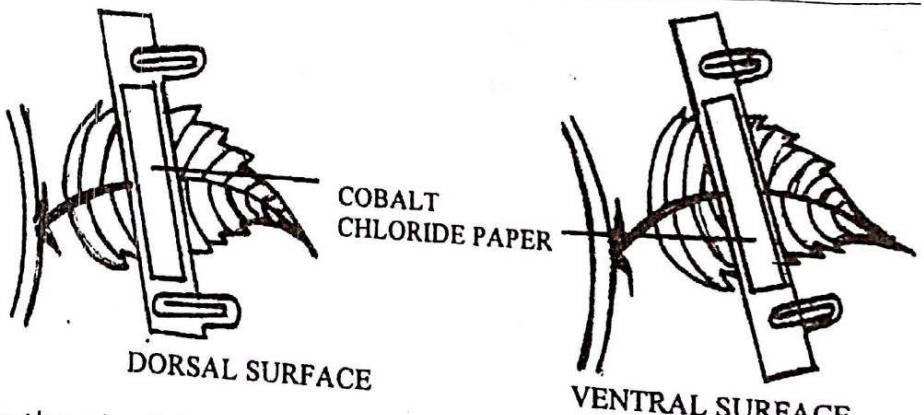
Question 5

a. The diagram given below represents the human heart in one phase of its activity. Study the same and answer the questions that follow :- (5)



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 suppor your answer.
4. Draw well labelled diagrams of part 1 and 2 to show the structural differences between them.
5. What type of blood flows through the parts.marked `1' and `2'?

b. Given below is an experimental set up to demonstrate a particular process. Study the same and answer the questions that follow: (5)



1. Name the physiological process being studied.
2. Explain the process mentioned above.
3. What is the aim of the above experiment?
4. What would you observe in the experimental set-up after an hour? Give a reason to support your answer.
5. Mention any three adaptations found in plants to overcome the physiological process mentioned in (1) above.