

- (b) (i) Work out the rate of heat loss in the boiling tube labelled **A** and test-tube labelled **B** between the 5th and 15th minutes.
- A** ..... (2 marks)
- B** ..... (2 marks)
- (ii) Account for the answers in (b) (i) above. (2 marks)
- (iii) How does the explanation in (b) (ii) above apply to an elephant and a rat? (2 marks)
- (c) (i) State the role of the cotton wool in this experiment. (1 mark)
- (ii) Name **two** structures in mammals that play the role stated in (c) (i) above. (2 marks)
- (d) State **three** advantages of having constant body temperature in mammals. (3 marks)
- 7 Describe the process of fertilization in flowering plants. (20 marks)
- 8 Describe how a finned fish such as Tilapia moves in water. (20 marks)

### 29.4.3 Biology Paper 3 (231/3)

- 1 You are provided with a visking tubing, a solution labelled **L**, Iodine solution labelled solution **E**, Benedict's solution labelled solution **F** and a piece of thread.

Tie one end of the visking tubing tightly using the thread provided. With the help of a syringe, put 10 ml of the solution labelled **L** into the visking tubing. Tie the other end of the visking tubing tightly.

**Ensure that there is no leakage at both ends of the visking tubing.**

Wash the outside of the visking tubing with water. Place the visking tubing upright in a 100 ml beaker. Add distilled water into the beaker to reach the level of the liquid in the visking tubing. Allow the set up to stand for 30 minutes or more.

- (a) Using 2ml in a test-tube in each case, test for the food substance in the liquid outside the visking tubing using (6 marks)

TEST	Procedure	Observations	Conclusion
(i) Iodine solution (Solution <b>E</b> )			
(ii) Benedict's solution (Solution <b>F</b> )			

- (b) Using 2ml in a test-tube in each case, test for the food substance in the contents of the visking tubing using (2 marks)

TEST	Procedure	Observations	Conclusion
(i) Iodine solution (Solution <b>E</b> )			

(ii) Benedict's solution  
(Solution F)

(c) Account for your results in (a) and (b) above. (3 marks)

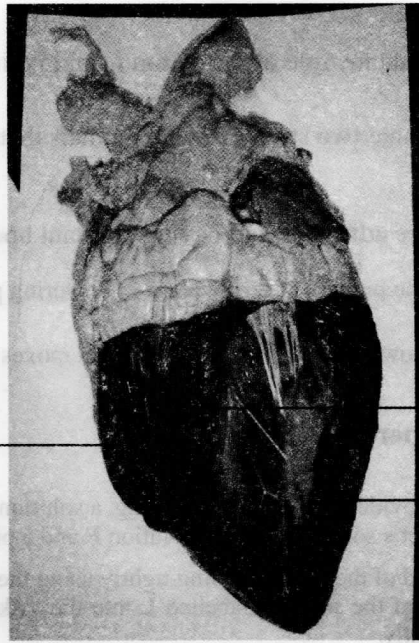
(a) .....

(b) .....

2 The photographs labelled J, K, M<sub>1</sub> and M<sub>2</sub> are sections of a mammalian heart. Examine them.



PHOTOGRAPH J



PHOTOGRAPH K



PHOTOGRAPH M<sub>1</sub>



PHOTOGRAPH M<sub>2</sub>

(a) The blue, green and cream strings go through various blood vessels and end up at various chambers of the heart. For each string, name the chamber where the string ends and the blood vessel through which the string goes. (8 marks)

String	Chamber	Blood vessel
Blue	.....	.....
Green	.....	.....
Cream 1	.....	.....
Cream 2	.....	.....

(b) Name the part labelled 3 in photograph K. (1 mark)

(c) The parts labelled 4 and 5 are walls of two chambers of the heart. Account for the difference in the thickness of the walls. (1 mark)

(d) Photograph M<sub>1</sub> shows two blood vessels labelled X and Y while M<sub>2</sub> shows transverse sections of the same blood vessels.

With a reason, identify the type of each of the blood vessels. (4 marks)

X .....

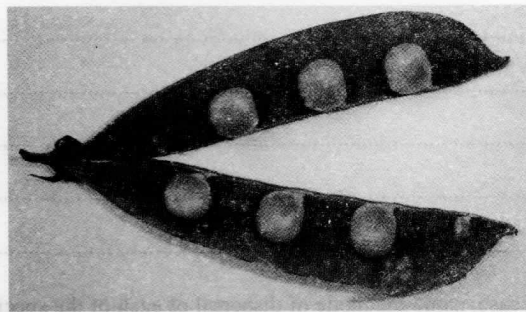
Reason .....

Y .....

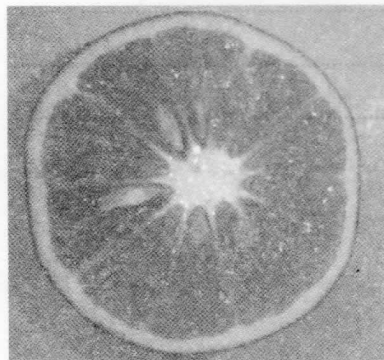
Reason .....

(e) In photograph K, indicate by letter B the part of the heart which would be cut to expose the bicuspid valve. (1 mark)

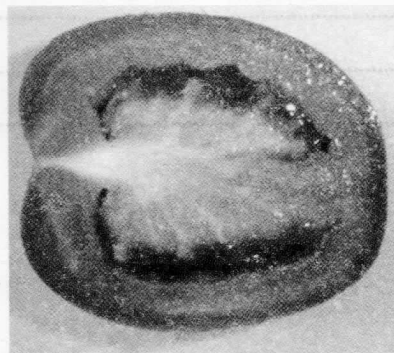
3 The photographs labelled Q, R, S and T are sections of some parts of plants.



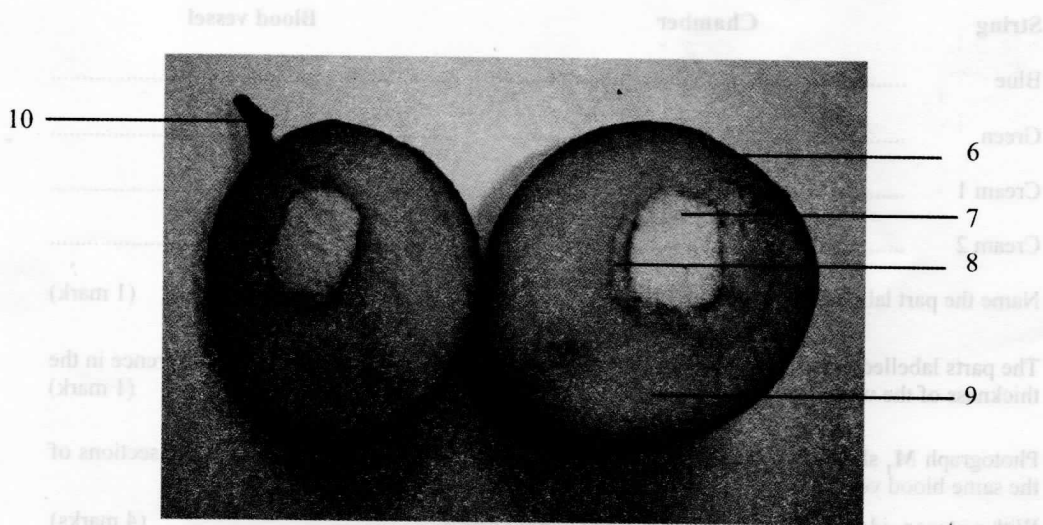
PHOTOGRAPH Q



PHOTOGRAPH R



PHOTOGRAPH S



**PHOTOGRAPH T**

(a) Name the type of placentation in the specimens shown in photographs Q, R and S. (3 marks)

Q .....

R .....

S .....

(b) Label a seed in photographs R and S. (2 marks)

(c) Name the parts labelled 6, 7, 8, 9 and 10 in photograph T. (5 marks)

6 .....

7 .....

8 .....

9 .....

10 .....

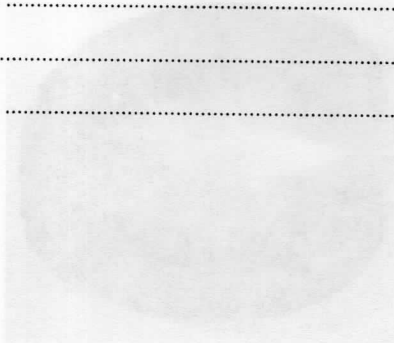
(d) Giving a reason in each case, name the mode of dispersal of each of the specimens in photographs Q and T. (4 marks)

Q .....

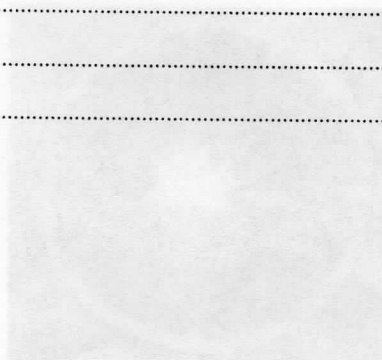
Reason .....

T .....

Reason .....



PHOTOGRAPH S



PHOTOGRAPH R