BIOLOGY

Paper – 2

(PRACTICAL)

Three hours and a quarter

(The first 15 minutes of the examination are for reading the paper only.

Candidates must NOT start writing during this time).

All workings, including rough work, should be done on the same sheet as, and adjacent to, the rest of the answer.

The intended marks for questions or parts of questions are given in brackets [ ].

Question 1. **[6]**

Examine the given specimens **D-41** and **D-42** provided and answer the following:

(a) Describe the flower in semi technical terms (details of the individual whorls not required).

(b) With the help of forceps carefully remove the corolla from D-41 and D-42. Observe the detailed characteristics and draw neat labeled diagrams.

(c) With the help of a sharp razor cut a longitudinal section of each flower specimen and make a labeled diagram of each cut faces. *Show the sections to the Visiting Examiner.*

(d) Observe the cut faces and record the following features in a tabular form as given below:

Androecium:

(i) Relation of stamen to petals

(ii) Relation to each other

(iii) Nature of anther

Gynoecium:

(i) Nature of stigma

(ii) Type of placentation

(iii) Position of ovary

D-41	D-42

(e) Cut the ovaries of D-41 and D-42 in cross section and draw labelled sketches of their cut surfaces.

(f) Write the floral formula for each specimen.

(g) Name the families to which the two specimens belong to and give *two* reasons each to support your answer.

(h) Write the biological name of any *one* important plant of each family.

Question 2. **[5]**

(a) Measure and pour 50 ml of solutions S_1 and S_2 into two separate petri dishes provided for this experiment and label them accordingly.

(b) Cut two strips from specimen D – 43, each strip measuring exactly 5 cm x 1 cm x 1 cm. Place the strips on a moist filter paper to prevent them from getting dried up. Record the initial length of the two strips of potato and fully immerse one each in the two solutions S_1 and S_2. Cover the petri dishes to check evaporation of the solutions. *Show the set-up to the Visiting Examiner.*

(c) After 30 minutes remove the strips from the two solutions and dry them with filter papers. Measure and record their length as against

those recorded at the start. Copy and complete the table given below.

	Length at start	Length after 30 minutes
S_1		
S_2		

(d) Report on any change that might have taken place in each strip.

(e) Account for the changes that you have found.

(f) From your observations, what could be the nature of the solutions S_1 and S_2 with reference to the potato cell sap?

(g) Mention situations in a plant which are similar to those found with regard to the potato strips in solutions S_1 and S_2.

Question 3. **[4]**

Make a temporary stained mount of a nerve cell from specimen **D-44**. Follow the procedure given below:

(a) With the help of forcep and scalpel remove some substance from the grey matter portion of the spinal cord. Tease it with the help of a needle. Stain it with methylene blue for two minutes. Blot out the excess stain. Put a drop of glycerine and cover it with a cover slip. *Show your slide to the Visiting Examiner under a low power microscope.*

(b) Draw a neat labeled diagram of the mount as seen under the low power miscroscope.

Question 4. **[5]**

Identify the given specimens **A** to **E** and give *two* reasons to support your answer in each case. Draw a neat labeled diagram for each specimen. You will be given *3 minutes* to identify, give reasons and draw a labeled diagram.

This booklet contains 4 pages.

This booklet contains 4 pages.