SPECIMEN PAPER II OF II

BIOLOGY

PAPER - 2

(PRACTICAL)

(*Three hours*)

(*Candidates are allowed additional 15 minutes for **only** reading the paper.*
They must NOT start writing during this time.)

Answer **all** *questions.*
All working including rough work should be done on the same sheet as the rest of the answer.
The intended marks for questions or parts of questions are given in brackets [ ]

Note: Q4 (Spotting) is to be attempted on a separate continuation sheet. The continuation sheet is to be handed over to the Supervising Examiner after the last observation. This continuation sheet should be attached to the main answer booklet of the candidate after the examination.

Question 1 **[5]**

(a) Examine carefully the flower specimens **D41** and **D42** provided. Describe their floral characters in semi-technical terms. (Details of individual whorls are not required).

(b) Cut a longitudinal section of the flower specimen **D41** with a sharp razor blade**.** Arrange one of the cut surfaces on a moist filter paper. Draw a neat and labelled diagram of the cut surface.

(c) With the help of a sharp blade cut a longitudinal section of specimen **D42**. Arrange one of the cut surfaces on a moist filter paper. Draw a neat and labelled diagram of this cut surface, highlighting the essential whorls.

(d) Observe with a hand lens the cut surfaces of **D-41** and **D-42**. Record your observations in the table below:

Androecium		**D41**	**D42**
(i)	Relation of stamens to each other	--	--
(ii)	Method of attachment of anther to filament	--	--
Gynoecium			
(i)	Nature of stigma	--	--
(ii)	Type of placenta	--	--

(e) Name the families to which each flower specimen belongs.

(f) Point out any two features, which are distinctive characteristics of each family.

(g) Take a fresh specimen of **D41.** With the help of a forceps, remove the whorls one by one, till you reach the gynoecium. With the help of a sharp razor blade, cut a transverse section of the ovary. Draw a neat and labelled diagram of the transverse section.

(h) State the floral formulae of specimens **D41 and D42**.

(i) Draw the floral diagram of specimen **D42**.

(j) Mention *one* economically important plant belonging to each family mentioned in (f) above (Write the **botanical name** only).

Question 2 **[5]**

You are provided with a well-watered geranium plant (or any other medium-sized leafy plant can be used) and a few dry cobalt chloride papers in a covered Petri dish.

(a) Place the dry cobalt chloride papers, one each on the upper and lower surface of a selected leaf, with the help of a forceps. Immediately, cover the papers with glass slides.

(b) Hold the glass slides together with clothes' pegs (provided) or rubber bands.

(c) Place a dry cobalt chloride paper between two glass slides. Press the slides together with clothes pegs or rubber bands. Keep this aside. **Show the entire set up to the Visiting Examiner.**

(d) Observe the two surfaces of the experimental leaf (a) and the cobalt chloride paper covered with slides (c) every two minutes and record your observations as shown below:

Time (Minutes)	Experimental Leaf (a)		Cobalt Chloride Paper in Slides (c)
	Upper Surface	Lower Surface	
2			
4			
6			
8			
10			

(e) Continue your observations till you observe a change in the colour of the papers.

(f) Explain your observation of the two papers on two surfaces of the leaf (a) and in slides (c).

(g) What do you conclude from the experiment?

(h) Define the physiological process that you have observed while performing the above experiment.

Question 3 **[5]**

(a) With the help of a sharp razor/blade, cut thin sections of **D43**. Select a good transverse section and stain it with safranin. Mount the section in glycerine. **Show your slide to the Visiting Examiner under a low power microscope.**

(b) Draw a neat labelled outline of the mount as observed under the microscope.

(c) Identify the specimen and mention at least three important characteristics.

Question 4 **[5]**

Identify the given specimens A to E. **For specimen E identify the type of inflorescence**. Give *two* identifying characteristics to support your answer in each case. Draw a neat labelled diagram of each specimen. You are not allowed to spend more than three minutes for each spot.

Note: *Hand over your continuation booklets to the Supervising Examiner after you finish answering this question.*

Question 5

Show the following to the Visiting Examiner for assessment:

(a) Project **[7]**

(b) Biology Practical File. **[3]**

PAPER – 2

(PRACTICAL)

List of Items for Spotting

Spotting:

1. T.S. of monocot root - slide
2. Capitulum inflorescence
3. Plasmodium - slide
4. T.S. of testis of mammal - slide
5. Experiment to show transpiration in a plotted plant covered by a polythene bag.