BIOLOGY

PAPER - 2

(PRACTICAL)

(Maximum Marks: 30)

(Time allowed: 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 specimen **D-41** provided. Describe the floral characteristics in semi-technical terms. (Details of individual whorls are not required.)

(b) Cut a longitudinal section of one flower of specimen **D-41** with a sharp razor blade. Place one of the cut surfaces on a moist filter paper so that all the parts are clearly visible. Draw a neat labelled diagram of the cut surface.

(c) With the hand lens provided, carefully observe the cut surface of **D-41**. Record your observations in the table given below.

(i)	Relation of stamens to each other	
(ii)	Shape of the anther	

(d) Take a fresh specimen of **D-41.** Using fine forceps, gently pull off and discard the sepals, petals and anthers of the floral specimen. Isolate its pistil.

Show it to the Visiting Examiner

Draw a well labelled diagram of the isolated pistil.

(e) Cut a transverse section of the ovary. Observe it with a hand lens and draw a neat labelled diagram of the transverse section of ovary.

© *Copyright reserved.*

www.ncertbooks.net

(f) Comment upon the type of placentation.

(g) Draw the floral diagram of **D-41**.

(h) Write the floral formula of **D-41**.

(i) Name the family to which the specimen **D-41** belongs.

(j) Write two characteristic features of the family mentioned by you.

(k) Write the complete **botanical name** (mentioning genus as well as species) of one economically important plant belonging to this family.

Question 2 **[3]**

(a) You are provided with two samples of soil (**S1 and S2**).

(b) Add 250 mg of soil samples in two separate test tubes labelled as A1 and A2.

(c) Add 10 ml of distilled water in each of the test tubes.

(d) Stir the test tubes thoroughly.

(e) Filter the contents in separate test tubes (labelled as **FS1 and FS2** respectively) with the help of filter paper.

(f) Check the pH of the supernatant in the test tubes FS1 and FS2 with the help of pH paper.

Show the pH reading to the Visiting Examiner.

(g) Record your observations in the following format:

Test tube No.	pH of the supernatant	Nature of the soil (Acidic / alkaline / neutral)
FS1		
FS2		

(h) Define pH.

(i) How does pH influence the plant growth?

(j) What is the normal pH of a fertile soil?

Question 3 **[2]**

(a) With a sharp razor blade, cut several longitudinal sections of the specimen **D-42** provided. Select a good section and stain with safranin. Mount it in glycerine.

Show your slide to the Visiting Examiner under low power of Microscope.

www.ncertbooks.net

(b) Draw a neat labelled diagram of the mount as seen under the microscope. (Microscopic details are not required.)

(c) Identify the given specimen.

(d) Write *two* characteristic features of this specimen.

Question 4 **[5]**

Identify the given specimens A to E. Give *two* reasons 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 sheets to the Supervising Examiner after you finish answering this question.*

Question 5

Show the following to the Visiting Examiner for assessment:

(a) Project **[10]**

(b) Biology Practical File. **[5]**

www.ncertbooks.net

Substances provided to the students

1. Question 1: **D 41**: China rose or any other flower belonging to the family Malvaceae.
2. Question 3: **D 42**: A few soaked seeds of maize.
3. Question 4 (**Spotting**)
   A. Slide of TS of testis of a mammal
   B. Slide of marginal placentation in plant
   C. Slide of whole mount / Unlabelled chart / Virtual image of Sporozoite of *Plasmodium*
   D. Specimen / Unlabelled chart / Virtual image of Rohu fish with a caption "Type of ecological adaptation"
   E. Specimen / Unlabelled chart / Virtual image of a Hibiscus with a caption "Type of adaptation for pollination

www.ncertbooks.net