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 in the answer script.

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

Question 1. **[6]**

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

(a) Describe the flowers in semi-technical terms (details of the individual whorls not necessary).

(b) Cut a longitudinal section of the specimen E-42 and draw a neat labelled diagram.

(c) Take a new specimen of E-41 and E-42 and with the help of forceps remove the corolla and androecium. Examine the corolla and androecium and tabulate your observation as shown in the tables given below.

	Corolla	
	E – 41	**E – 42**
Number of petals		
Aestivation		

	Androecium	
	E – 41	**E – 42**
Number of stamens		
Arrangement of stamens		
Attachment with petals		

(d) Take a new specimen of E-42 and remove the pistil. Cut the ovary of specimen E-42 in cross-section and draw a labelled diagram of the cut surface.

(e) Give *one* unique feature of the ovary of E-42.

(f) Draw the floral diagram of specimen E-42.

(g) Write the floral formula of E-42.

(h) Name the families to which the two specimens belong to. State *two* features that are characteristics of each family.

(i) Mention *two* botanical names of the specimens E-41 and E-42.

Question 2. **[4]**

You are provided with the following materials:

- ✓ beaker
- ✓ funnel
- ✓ test-tube
- ✓ water
- ✓ specimen **E-43**

(a) Carry out the experiment as instructed below:

Step 1 Place the specimen E-43 in the funnel and invert it in the beaker.

Step 2 Fill the beaker with water in such a way that the stem of the funnel is under water.

Step 3 Fill the test-tube with water and invert it over the stem of the funnel. There should not be air space in the test-tube. Set-up the experiment where there is enough light. *Show your experimental set-up to the Visiting Examiner.*

(b) Draw a neat labelled diagram of the experimental set-up.

(c) What is the aim of the experiment?

(d) How would you test the gas evolved?

Question 3. **[5]**

Make a temporary stained mount of a transverse section of the given specimen **E-44**.

Follow the procedure given below:

(a) Cut a thin transverse section of the specimen E-44 and stain it with safranin. Blot out the excess stain. Put a drop of glycerine and cover it with a cover slip.

(b) *Show it to the Visiting Examiner* under a low power microscope.

(c) Identify the specimen E-44 and give *two* reasons to support your answer.

(d) Draw a neat labelled diagram. Your diagram should be an enlarged portion showing cellular details.

(e) Mention *two* precautions that you must take while making temporary stained mount.

Question 4. **[5]**

You will be given **three** minutes each to identify the given specimens A to E. Take back your answerscripts to your working table and complete the rest of the work. Draw a neat labelled diagram of each specimen and give *two* reasons to support your answer in each case.
In case of models, mention the role of the part pointed in the model instead of writing points of identification.

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