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. **[5]**

Examine the given specimens **A-1** and **A-2** provided and answer the following:

(a) Classify the specimen A-1 based on the following:

(i) Family

(ii) Genus

(b) Describe the floral characteristics in semi-technical term of the specimen A-1 for The following parts:

(i) Androecium

(ii) Gynoecium

(c) Draw the floral diagram of A-1.

(d) Take the specimen A-1 and remove the epicalyx, calyx, corolla and staminal tube.

(i) Examine the gynoecium of A-1 and *show it to the Visiting Examiner*.

(ii) Draw a well-labelled diagram of the gynoecium of both A-1 and A-2.

(e) (i) Cut the T.S. of the ovary of A-2 and *show it to the Visiting Examiner* under a dissecting microscope.

(ii) Draw a neat and well-labelled diagram of the T.S of ovary of A-2.

(f) Write the floral formula for specimen A-2.

(g) Give *two* economic importance of the specimen A-2.

Question 2. **[6]**

You are provided with the following materials: potato tuber, solution Y, solution Z and beakers. Set-up the experiment as per the instructions given below.

(a) Peel off the outer skin of the potato tuber.

(b) Prepare two cubes of the potato approximately measuring 2cm×2cm×2cm.

(c) Take two beakers and put solutions Y and Z separately.

(d) Immerse one potato cube each in the above two beakers.

(e) Keep the set-up for about 20 minutes.

(f) Answer the following questions.

(i) Take out the potato cubes and measure the cubes. Copy and fill-in the table given below.

Solution	Initial measurement	Final measurement
Y	2cm×2cm×2cm	
Z	2cm×2cm×2cm	

(ii) Give *one* reason each for the above findings.

(iii) Define the process responsible for the above findings.

(iv) Give any *two* significance of the above process in plants.

Question 3.

Make a temporary stained mount of a transverse section of the given specimen A-3.

Follow the procedure given below:

(a) Cut many thin transverse sections of the specimen A-3 provided.

(b) Select a good section and stain it with safranin/eosin and wash off the excess stain if necessary.

(c) Mount it in glycerine on a slide.

(d) *Show it to the Visiting Examiner* under a microscope.

(e) Draw a neat labeled cellular diagram of the T.S of the specimen A-3.

(f) Give any *two* points to identify the given specimen A-3.

(g) Write any *two* precautions for mounting the above section.

Question 4. **[5]**

Identify the given specimens **1** to **5** 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 for identification.**