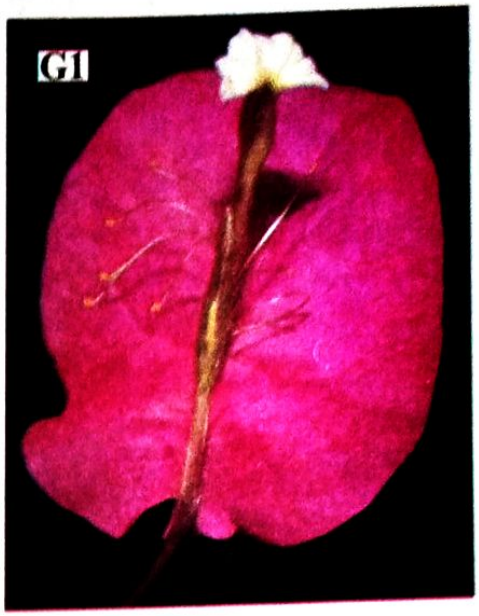
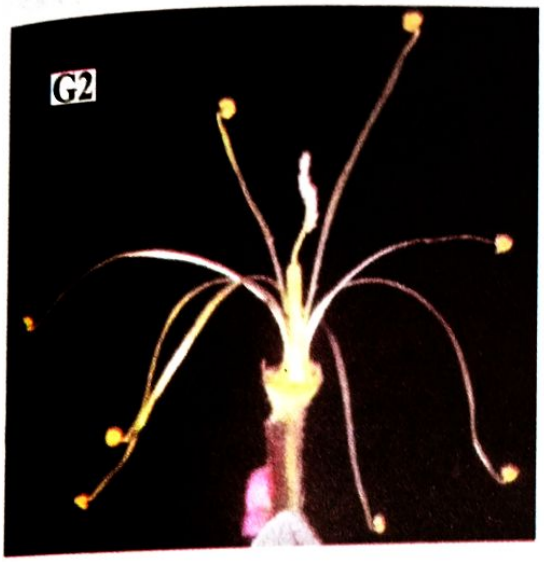
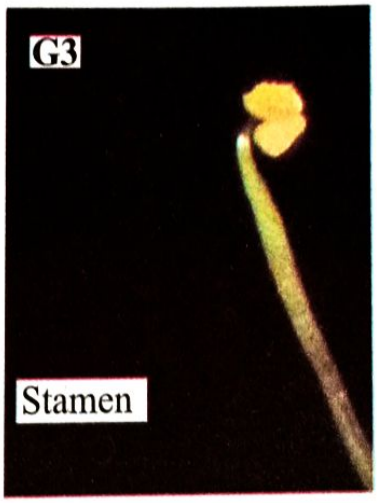
Question 8

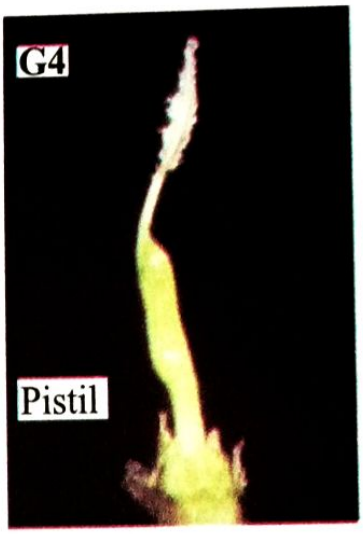
You are provided with an actual twig bearing flowers labeled G whose photograph and its parts after dissection are shown below. Examine one of the flowers externally and then carefully dissect it. Examine each of the floral parts using a hand lens where necessary.











(a) Describe the external features of one of the flowers (4 marks).

The flower is attached to a bract. It has regular radial symmetry/ actinomorphic. It has five fused petals/gamopetalous forming a funnel shaped tubular corolla/ perianth that encloses the androecium and the gynoecium.

(b) Carefully remove the corolla tube and describe the:

(i) androecium (3 marks)

Eight stamens of varying lengths with a bilobed anther. Filaments are long and originate from the receptacle. The anthers lie above the stigma. Stamens enclosed in the tubular corolla.

(ii) gynoecium. (2 marks)

A single, white flavy stigma supported by a short green style. A single, elongated, green superior/ hypogynous ovary. Pistil is shorter than the filaments hence the stigma is below the anther.

(c) (i) Suggest the agent of pollination for the flower. (1mark)

Insects

(ii) Explain how the flower is adapted to pollination by the agent you have named in (c) (i) above. (2 marks)

- Brightly coloured/ conspicous bracts and corolla to attract insects;
- Anthers and stigma enclosed in the tubular corolla to brush against insects;
- Flowers occur in a cluster to be more conspicuous;
- Flowers are scented to attract insects;
- Presence of a landing stage/ corolla platform.

(d) (i) Name the class of the plant from which the flowers were obtained. (1 mark)

Dicotyledonae.

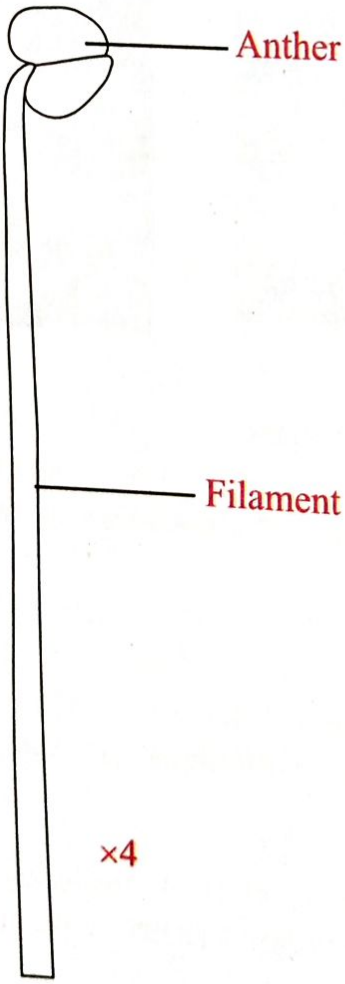
(ii) Give **three** reasons for your answer in (d) (i) above using observable features. (2 marks)

- Network venation on the bracts;
- 8 stamens
- 5 petals;
- Floral parts are in fives or multiples of four.

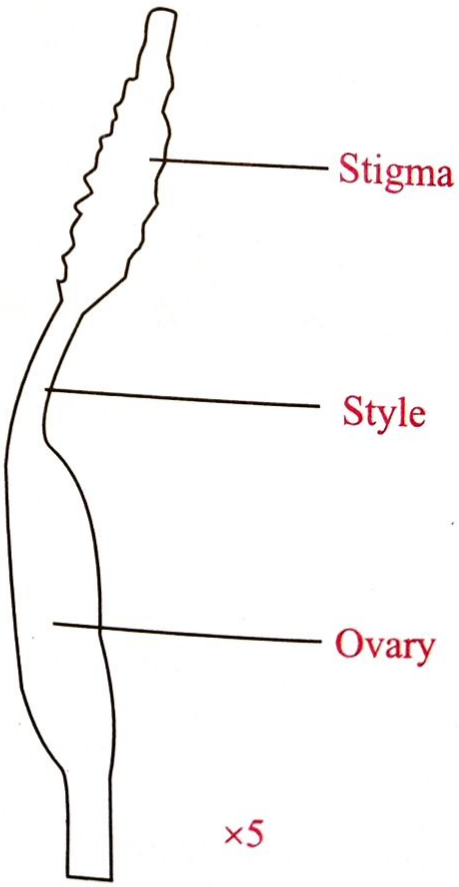
(e) Give the observable features of specimen G that hinder self pollination and encourage cross pollination. (2 marks)

- Anthers and stigma located at different levels.
- Anthers and stigma enclosed in a tubular corolla.
- Presence of brightly coloured petals and bracts.

(f) Observe one stamen and the pistil using a hand lens then draw and label them. (5 marks)



Stamen



Pistil