1. From what part of the embryo plant within the seed does the root develop?

**Radicle**

1. In which part of a flower does a seed form?

 **Ovule**

1. Some flowers have nectaries. How are these flowers pollinated? Explain your answer.

**Insects – attracted to nectar**

1. What happens to the two polar nuclei?

**Fuse / form diploid (**or **primary endosperm) / (then fusion) to triploid** or **fertilisation / endosperm nucleus**

1. In the case of the ovary and ovule state what may happen to each of them after fertilisation.

Ovary**: becomes the fruit;** Ovule**: becomes the seed**

1. Explain what is meant by pollination. What is the difference between self-pollination and cross-pollination?

**Transfer of pollen / to carpel (stigma)** or **to female;** Self pollination **– occurs on same plant (or flower);** Cross pollination **– occurs between plants (of same species)**

1. Name two ways in which cross-pollination happens.

**Wind / animal**

1. Suggest why cross-pollination is preferable to self-pollination.

**Cross pollination increases variation** or **reduces chance of genetic problems**

1. True or False. Endosperm is a food reserve in some seeds.

**TRUE**

1. To which part of a flower is pollen carried?

**Stigma of the carpel**

1. What is meant by cross-pollination?

**Transfer of pollen from one flower / plant to another**

1. Name two methods of cross-pollination.

**Wind / animal / named animal**

1. Distinguish between pollination and fertilization.

Pollination v fertilisation**: transfer (of pollen) versus fusion**

1. Give one location in a seed in which food is stored.

**Endosperm** or **cotyledon** or **(seed) leaf** or **nucellus** or **around the embryo**

1. Name a carbohydrate that you would expect to be present in the food store of a seed.

**Starch**

1. Give two ways in which pollen may be transported to another flower.

**Wind / insect** or **animal / artificial**

1. What forms in the ovary of a flower after pollination and fertilization?

**Seed** or **zygote** or **embryo** or **food reserve**

1. Distinguish clearly between pollination and fertilisation.

Pollination **– transfer of pollen;** Fertilisation **– fusion of gametes** or **of sex cells** or **fusion of “pollen” and egg cell**

1. State a location in the seed where food is stored.

**Endosperm** or **cotyledon** or **seed leaf**

1. What is meant by pollination?

**Transfer/ of pollen**

1. From the list below, choose three characteristics in each case of; 1. an insect-pollinated flower, 2. a wind-pollinated flower. Brightly coloured petals, Feathery stigmas, Anthers within petals, Anthers outside petals, Nectaries, Petals reduced or absent.

**1. Brightly coloured petals / Anthers within petals, nectaries; 2. Feathery stigmas, Anthers outside petals, Petals absent or reduced.**

1. What process follows pollination in the life cycle of a flowering plant?

**Fertilisation**

1. From which structure in the seed did the root develop?

**Radicle**

1. Write notes on the following topic: Adaptations of wind-pollinated flowers.

**Long stamens / long stigmas / feathery stigmas / large numbers of pollen grains / smooth pollen** or **light pollen / no showy colours** or **no scent** or **no nectar** or **small petals** or **no petals**

1. What is meant by the term fertilisation?

**Fusion of gametes** or **formation of zygote**

1. Give a brief account of the process of fertilisation in flowering plants.

**Generative nucleus / mitosis / two male gametes (or nuclei) / one fuses with egg / to form zygote / other (male gamete** or **nucleus) fuses with (two) polar nuclei / to form endosperm**

1. What is meant by fertilisation?

**Fusion of gametes** or **formation of zygote**

1. Name the part of the flower in each case: 1. Where fertilisation occurs 2. That becomes the fruit.

**1. Embryo sac** or **ovule** or **ovary** or **carpel 2. Carpel** or **ovary**

1. Give two ways by which pollen is transferred from one flower to another.

**Wind / insects**

1. Name one structure through which the pollen tube grows in order to reach the embryo sac.

**Stigma** or **style** or **ovary** or **micropyle**

1. Explain the term fertilisation.

**Fusion / of gametes / to produce a zygote**

1. What is meant by the term pollination?

**Transfer of pollen / from anther to stigma**

1. Give two methods of pollination in plants.

**Wind / insect / self**

1. What is the next step after pollination in the lifecycle of the plant?

**Fertilisation**

1. Suggest a substance that flowers produce that may cause hay fever in some people.

**Pollen**

1. Name the site of production of a pollen grain.

**Anther**

1. Name the structure on which pollen must land to complete pollination.

**Stigma**

1. Name two methods of cross pollination.

**Wind / animal**

1. Many species of plant have mechanisms that prevent self-pollination. Suggest how such plants could benefit from this.

**Greater variation or explained or prevents inbreeding or explained**

1. Describe in detail the events that follow the arrival of a pollen grain at the stigma up to and including fertilisation.

**Pollen (grain) germinates or pollen tube produced / grows through style / generative nucleus divides by mitosis / to form 2 (male) gametes / entry into embryo sac / one (gamete) fertilises the egg (cell) / one fertilises the polar nuclei.**

1. Which part of a flower usually develops into a fruit?

**Ovary**