**SEXUAL REPRODUCTION IN FLOWERING PLANTS**

**Assertion and Reason Questions**

Given below are assertion and reason. Mark the correct choice from given options.

(a) Assertion and reason both are true and the reason is correct explanation of assertion.

(b) Assertion and reason both are true but reason is not correct explanation of assertion.

(c) Assertion is true but reason is wrong.

(d) Assertion and reason both are wrong.

1. **Assertion:** Many citrus and mango varieties shows polyembryony.

**Reason :** Some of the nuclear cells surrounding the embryo sac start dividing, protrude into the embryo sac and develop into the embryos results is ovule contains many embryos.

1. **Assertion:** Apple, strawberry, cashew, etc., fruits are called false fruits. **Reason:** Such fruits however develop only from the ovary.
2. **Assertion:** Black pepper and beet have Perisperm.

**Reason:** Perisperm is remnants of MMC.

1. **Assertion:** Wheat, maize, barley, castor, sunflower have albuminous seeds.

**Reason:** Seeds have no residual endosperm as it is completely consumed during embryo development.

1. **Assertion:** Pea, groundnut have non-albuminous seeds.

**Reason:** Seeds retain a part of endosperm as it is not completely used up during embryo development.

1. **Assertion:** In angiosperms, the seed is the final product of sexual reproduction.

**Reason:** A seed typically consists of seed coat(s), cotyledon(s) and an embryo axis.

1. **Assertion:** Flowering plants have developed many devices to discourage self-pollination and to encourage cross pollination.

**Reason:** Continued self-pollination result in inbreeding depression.

1. **Assertion:** Both wind and water pollinated flowers are not very colourful and do not produce nectar.

**Reason:** Majority of insect pollinated flowers are large, colourful, fragrant and rich in nectar.

1. **Assertion:** Distribution of some bryophytes and pteridophytes is limited. **Reason:** It needs air for the transport of male gametes and fertilization.
2. **Assertion:** Pollen grains coming in contact with the stigma is a chance factor in both wind and water pollination.

**Reason:** To compensate for this uncertainties and associated loss of pollen produce enormous amount of pollen when compared to the number of ovules available pollination.

1. **Assertion:** Xenogamy only type of pollination which produces genetically different plant

**Reason:** This is the only type of pollination which during pollination brings genetically different types of pollen grains to the stigma.

1. **Assertion:** Geitonogamy is genetically cross pollination.

**Reason:** Since the pollen grains come from the different plant.

1. **Assertion:** Cleistogamous flowers produce assured seed-set even in the absence of pollinators.

**Reason:** Cleistogamous flowers are invariably autogamous as there is no chance of cross-pollen landing on. the stigma.

1. **Assertion:** Embryo sac develop from megaspore by mitotic divisions and these mitotic divisions are strictly free nuclear.

**Reason:** Nuclear divisions are not followed immediately by cell wall formation.

1. **Assertion:** In a majority of flowering plants monosporic development occurs.

**Reason:** Out of four megaspores form from one MMC only one is functional while the other three degenerate and functional megaspore develops into the female gametophyte.

1. **Assertion:**It has become a fashion in recent years to use pollen tablets as food supplements.

**Reason:** Pollen consumption has been claimed to increase the performance of athletes and race horses.

1. **Assertion:** Pollen grains are well preserved as fossils

**Reason:** Because of the presence of sporopollenin.

1. **Assertion:** Apomixis is formation of seeds without fertilization.

**Reason:** Apomixis is found in some angiosperms, particularly in grasses.

1. **Assertion:** Mature dicotyledonous embryo has two cotyledons and an embryonal axis with epicotyl and hypocotyl.

**Reason:** Embryos of monocotyledons have a single cotyledon.

1. **Assertion:** The products of double fertilization are the diploid zygote and the triploid primary endosperm nucleus.

**Reason:** Zygote develops into the embryo and the primary endosperm cell forms the endosperm tissue.

1. **Assertion:** Pollination does not guarantee the transfer of right type of pollen hence fertilization.

**Reason:** The ability of the pistil to recognize the pollen followed by its acceptance or rejection is the result of a continuous dialogue between pollen grain and the pistil.

1. **Assertion:** If hybrids are made into apomicts, there is no segregation of characters in the hybrid progeny.

**Reason:** Then the farmers can keep on using the hybrid seeds to raise new crop year after year and he does not have to buy hybrid seeds every year.

1. **Assertion:** Pollen grain reaches directly to the egg, which is seated deep in the ovarian cavity.

**Reason:** To effect fertilization, the pollen grains germinate on the ovule.

1. **Assertion:** Hybrid seeds have to be produced every year.

**Reason:** If the seeds collected from hybrids are sown, the plants in the progeny will segregate and do not maintain hybrid characters.

1. **Assertion:** Nucellus functions as a nutritive tissue.

**Reason:** It is always exhausted completely during development of embryo sac.

1. **Assertion:** The central tissue of ovules is the nucellus in which the. Archesporium differentiates.

**Reason:** A cell of the archesporium, the megaspore mother cell divides mitotically and one of the megaspores forms the embryo sac.

1. **Assertion:** Autogamy is pollination between two flowers on the same plant.

**Reason:** Geitonogamy is pollination between two flowers on different plants.

1. **Assertion:** A typical anther is bilobed, dithecous and tetrasporangiate. **Reason:** Pollen grains develop inside the microsporangia.
2. **Assertion:** Tapetum is two to three layer of cells and is a part of anther wall.

**Reason:** Tapetum layer is very important for the growth and development of pollen grain.

1. **Assertion:** Flowers are the seat of sexual reproduction in angiosperms.

Reason: In the flower, androecium represents the male reproductive organs and gynoecium consisting represents the female reproductive organs.