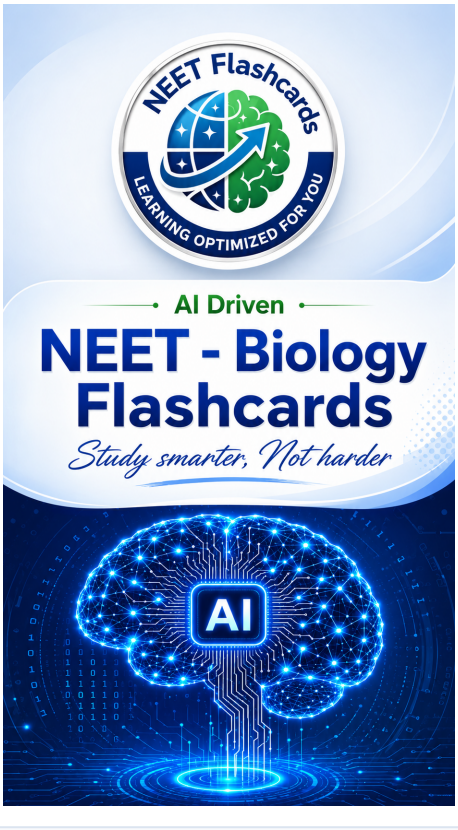

NEET Flashcards - Biology-12 : 1 : Sexual Reproduction in Flowering Plants

Question	Answer
Describe the generative cell of a pollen grain.	It is small, spindle-shaped, has dense cytoplasm, and floats in the cytoplasm of the vegetative cell.
Differentiate between perisperm and pericarp.	Perisperm is persistent nucellus in seeds, while pericarp is the fruit wall formed from the ovary wall.
Give examples of fleshy fruits.	Guava, orange, and mango.
Give examples of plants having many ovules in the ovary.	Papaya, watermelon, and orchids.
How are microspores arranged immediately after formation?	In a cluster of four cells called a microspore tetrad.
How do seeds help angiosperms colonise new habitats?	They possess adaptive strategies for dispersal.
How do unisexual flowers prevent autogamy?	Male and female flowers are separate, preventing self-pollination within the same flower.
How does apomictic embryo development occur in some species?	Diploid egg cells form without reduction division and develop into embryos without fertilisation.
How does pollination occur in animal-pollinated flowers?	The animal body gets coated with sticky pollen grains and transfers them to the stigma.
How many species are known and described according to the text?	Between 1.7 to 1.8 million species.
In biological nomenclature, how does the genus name begin?	With a capital letter.
In most flowering plants, how many megaspores are functional?	Only one megaspore is functional.
In which class is the order Primata placed?	Mammalia.
In which field did Panchanan Maheshwari work extensively?	He worked on embryological aspects and popularised embryological characters in taxonomy.
In which fields are taxonomic studies useful?	Agriculture, forestry, industry, and understanding bio-resources and biodiversity.
In which language are biological names generally written?	Latin.
In which plant family is wind pollination very common?	Grasses.
Name the four wall layers of a microsporangium.	Epidermis, endothecium, middle layers, and tapetum.
On what basis are plant families characterised?	Vegetative and reproductive features.

Question	Answer
Through which structure does the pollen tube enter the synergid?	Filiform apparatus.
What are antipodals?	Three cells located at the chalazal end of the embryo sac.
What are chasmogamous flowers?	Flowers with exposed anthers and stigma.
What are genera considered to be?	Aggregates of closely related species.
What are parthenocarpic fruits?	Fruits that develop without fertilisation.
What are polar nuclei?	Two nuclei situated below the egg apparatus in the large central cell.
What are post-fertilisation events?	Events including endosperm and embryo development, maturation of ovules into seeds, and ovary into fruit.
What are the features of insect-pollinated flowers?	They are large, colourful, fragrant, and rich in nectar.
What are the female reproductive organs in flowers?	Gynoecium consisting of pistils.
What are the three parts of a pistil?	Stigma, style, and ovary.
What are the two layers of the pollen grain wall?	Exine and intine.
What are the two main parts of a typical stamen?	The filament and the anther.
What changes are initiated before flowering?	Several hormonal and structural changes are initiated.
What characteristics do wind-pollinated pollen grains possess?	They are light and non-sticky.
What class does man belong to?	Mammalia.
What common feature was shared by many animate and inanimate objects for early man?	They evoked a sense of awe or fear.
What do pollen grains represent?	Male gametophytic generation.
What does an organism occupy in the system of classification?	A place or position.
What does coconut water represent biologically?	Free-nuclear endosperm.
What does the chapter aim to explain about angiosperms?	The morphology, structure, and processes of sexual reproduction in flowering plants.
What does the pistil recognise during pollen-pistil interaction?	Whether the pollen is compatible or incompatible.
What factors affect the viability of pollen grains?	Prevailing temperature and humidity.
What important biological concept did Ernst Mayr pioneer?	The currently accepted definition of a biological species.

Question	Answer
What is a species according to taxonomic studies?	A group of individual organisms with fundamental similarities.
What is artificial hybridisation?	A major approach in crop improvement involving crossing different species or genera to combine desirable characters.
What is chalaza in an ovule?	The basal part of the ovule opposite the micropylar end.
What is claimed about pollen consumption?	It increases the performance of athletes and race horses.
What is coleorrhiza?	An undifferentiated sheath enclosing the radicle and root cap in monocot embryos.
What is double fertilisation?	The occurrence of syngamy and triple fusion in the same embryo sac.
What is formed after the first mitotic division of the functional megaspore nucleus?	A 2-nucleate embryo sac.
What is formed after triple fusion?	A triploid primary endosperm nucleus (PEN).
What is formed when a pollen grain germinates on the stigma?	A pollen tube.
What is geitonogamy?	Transfer of pollen grains from the anther to the stigma of another flower of the same plant.
What is hypocotyl?	The cylindrical portion of the embryonal axis below the cotyledons.
What is inbreeding depression?	The harmful effect resulting from continued self-pollination.
What is megasporogenesis?	The process of formation of megaspores from the megaspore mother cell.
What is nomenclature?	The process of standardising the naming of living organisms.
What is perisperm?	Residual persistent nucellus present in some seeds.
What is special about pollen grains of many water-pollinated species?	They are protected from wetting by a mucilaginous covering.
What is the biological name of wheat?	*Triticum aestivum*.
What is the corresponding higher category for plants similar to phylum in animals?	Division.
What is the living world rich in?	Variety.
What is the scientific term for categories used in classification?	Taxa.
What is the usual moisture content of mature seeds?	About 10–15% by mass.
What occupies the centre of each microsporangium in a young anther?	Sporogenous tissue.

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Question	Answer
What phylum does housefly belong to?	Arthropoda.
What separates the theca in an anther?	A longitudinal groove running lengthwise.
What was later included in the scope of systematics?	Identification, nomenclature, and classification.
Which features form the basis of modern taxonomic studies?	External and internal structure, cell structure, developmental process, and ecological information.
Which is the oldest recorded viable seed mentioned in the text?	Lupinus arcticus from Arctic Tundra, viable after about 10,000 years.
Which nuclei are involved in triple fusion?	One male gamete nucleus and two polar nuclei.
Which plant families are included in the order Polymoniales?	Convolvulaceae and Solanaceae.
Why are cotyledons generally thick and swollen?	Due to storage of food reserves.
Why are hybrid seeds expensive for farmers?	Because production of hybrid seeds is costly.
Why are insects considered a taxonomic category?	Because they are organisms sharing common features like three pairs of jointed legs.
Why are pollen grains well preserved as fossils?	Due to the presence of sporopollenin in the exine.
Why are scientific names important?	They ensure each organism has only one universally accepted name.
Why do most zygotes divide only after some endosperm is formed?	To provide assured nutrition to the developing embryo.
Why does classification become more complex at higher categories?	Because determining relationships to other taxa becomes more difficult.
Why does self-pollination not lead to seed formation in self-incompatible species?	Because pollen germination or pollen tube growth is inhibited.
Why is emasculation performed?	To prevent self-pollination in bisexual flowers.