

DPP

DAILY PRACTICE PROBLEMS

Class : XIIth
Date :

Solutions

Subject : BIOLOGY
DPP No. : 8

Topic :- Sexual Reproduction in Flowering Plants

- 1 **(b)**
A-10-15%, B-Slowdown, C-Dormancy
- 2 **(b)**
Gametes are haploid structures, containing chromosome number half of somatic cells. When somatic cell has 40 chromosomes, the gametes will have 20 chromosomes.
- 3 **(b)**
Rose, sugarcane, cocoa and *Bougainvillea* are propagated by stem cutting.
- 4 **(c)**
Fusion of male and female gametes (i.e, syngamy) in seed plants, occurs through **siphonogamy** as the gametes are carried through the pollen tube. Pollen tube can enter the ovule by three methods:
 - 1.Porogamy- through micropyle
 - 2.Chalazogamy- through chalaza
 - 3.Mesogamy –pollen tube penetrates laterally through integuments or funiculus.
- 5 **(d)**
Endosperm $-3n$
Chromosome given = 36
Haploid number $\frac{36}{3} = 12$ chromosome male and female gametes are haploid, so answer is 12 and 13
- 6 **(d)**
When all the four megaspore nuclei take part in the formation of the female gametophyte (embryo sac), this type of development is called as **tetrasporic**. In tetrasporic embryo sacs, meiosis is not accompanied by wall formation.
- 7 **(a)**

Homogamy is condition, in which male and female parts of a flower mature simultaneously.

8 **(d)**

Emasculations is the removal of anther. It is done only in bisexual of monoecious plants

9 **(c)**

The outer seed coat (testa) of a seed is produced from outer integument of ovule. The inner integument forms tegmen (inner seed coat).

Ovary wall forms pericarp (fruit wall).

10 **(d)**

In most of the plants the fruit develops from the ovary (true fruits) and other floral part degenerate and fall off. However in a few species such as apple, strawberry, cashew, etc., the thalamus also contributes to fruit formation such fruits are called false fruit

11 **(a)**

Viability means ability to grow. This is a certain time period in which plant seed have ability to germinate. Lupine have the viability period about 10,000 years

12 **(b)**

Trenb observed entry of pollen tube into the ovule through chalazal end in *Casuarina*. This is known as chalazogamy.

14 **(b)**

Genetic method for preventing self-fertilisation
Flowering plants have developed many devices to discourage self-pollination. In some species, pollen, releases and stigma receptibility is non-synchronised, *i.e.*, either the pollen is released before the stigma becomes receptive or stigma becomes receptive much before the release of pollen.

In some other species the anther and stigma are placed at the different positions so that the pollen can not come in contact with the stigma of same flower. Both these devices prevent autogamy. The third device to prevent inbreeding is self-incompatibility. This is genetic a mechanism and prevents self pollination (from same flower or other flower of same plant) from fertilizing the

ovules by inhibiting pollen germination or pollen tube growth in pistil

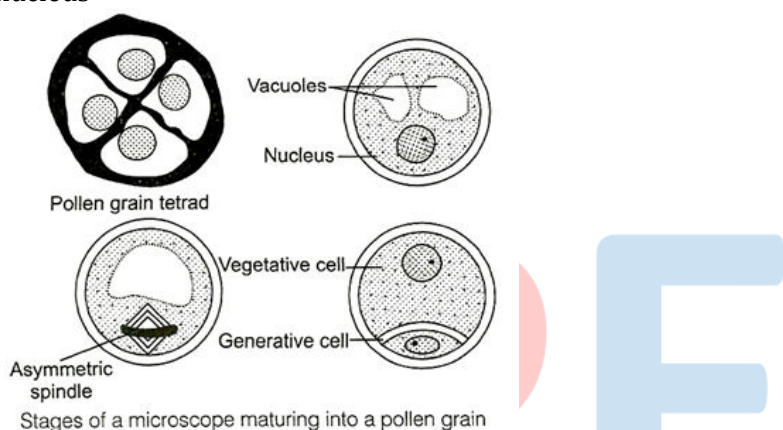
15 (c)

Stage of microsporogenesis forming pollens.

Pollen Grain When pollen grain matures it contains two cells

(i) **Vegetative cell** Vegetative cell is bigger and has abundant food reserve and a large irregular shaped nucleus

(ii) **Generative cell** The generative cell is small and floats in the cytoplasm of vegetative cell. It is spindle-shaped with dense cytoplasm and a nucleus



16 (c)

In angiosperms, the functional megaspore is haploid, which undergoes mitotic division and form 7-celled, 8-nucleate embryo sac. Therefore, each nucleus of embryo sac is haploid. At the time of fertilization, one male gamete fused with egg nucleus to form zygote ($2n$), whereas the second male gamete fuses with two polar nucleus (central cell) to form endosperm ($3n$). This type of fertilization is called double fertilization. Double fertilization is unique in angiosperms and discovered by **Nawaschin** (1898).

17 (c)

The pollen wall consists of two layers, the outer exine and inner intine. The exine is chiefly made up of sporopollenin, which is derived by the oxidative polymerization of carotenoids. Sporopollenin is one of the most resistant biological materials known. Exine is thin in beginning but become very thick with maturity.

18 (a)

Pollens are well preserved because the sporopollenin. It is hard and resistable to many organic and inorganic compounds

20 (a)

In angiosperms, one male gamete fuses with the egg to form the diploid zygote. The process is called **syngamy**. The other male gamete fuses with the two polar nuclei to form triploid primary endosperm nucleus. The process is called **triple fusion**. These two acts of fertilization constitute the process of **double fertilization**.

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	B	B	B	C	D	D	A	D	C	D
Q.	11	12	13	14	15	16	17	18	19	20
A.	A	B	D	B	C	C	C	A	C	A