

# QB365 Question Bank Software Study Materials

## Botany - Plant Breeding Important 2 Marks Questions With Answers (Book Back and Creative)

12th Standard

Biology

Total Marks : 40

2 Marks

20 x 2 = 40

- 1) Differentiate between primary introduction from secondary introduction.

**Answer :**

Primary Introduction	Secondary Introduction
(i) No alternation of genes	(i) Alternation by hybridization
(ii) Adaptation capability is more	(ii) Adaptation capability is more after hybridization

- 2) How are microbial inoculants used to increase the soil fertility?

**Answer :** Micro organisms are efficient in fixing nitrogen, solubilizing phosphate and decomposing cellulose. They improve soil fertility, plant growth. They are ecofriendly and cost-effective than chemical fertilizers. Example. Azospirillum.

- 3) Explain the best suited type followed by plant breeders at present?

**Answer :** (i) Vegetative propagation is the best suited measure for maintaining hybrid vigour, since the desired characters are not lost and can persist over a Period of time.

(ii) Many breeders believe that its magnitude of heterosis is directly related to the degree of genetic diversity between the two parents.

- 4) What is meant by domestication of plants?

**Answer :** Domestication is the process of bringing a plant species under the control of humans and gradually changing it through careful selection, genetic alteration and handling so that it is more useful to people.

- 5) What are bio-pesticides? Why they are considered better than synthetic pesticides?

**Answer :** Bio-pesticides are biologically based agents used for the control of plant pests. They are in high use due to their non-toxic, cheaper and eco-friendly characteristics as compared to chemical or synthetic pesticides.

- 6) Name any four plants used in Green leaf manuring

**Answer :** (a) Cassia fistula

(b) Sesbania grandiflora

(c) Azadirachta indica

(d) Pongamia pinnata

- 7) Define acclimatization.

**Answer :** The newly introduced plant has to adapt itself to the new environment. This adjustment or adaptation of the introduced plant in the changed environment is called acclimatization.

- 8) Define the following terms:

(a) Emasculation (b) Bagging

**Answer :** Emasculation: It is a process of removal of anthers to prevent self-pollination before anthesis (period of opening of a flower).

Bagging: The stigma of the flower is protected against any undesirable pollen grains, by covering it with a bag.

- 9) What does the term 'luxuriance' stands for in plant breeding? Explain.

**Answer :** Pseudoheterosis - Also termed as luxuriance. Progeny possess superiority over parents in vegetative growth but not in yield and adaptation, usually sterile or poorly fertile

10) State any one advantage and one disadvantage of polyploid breeding.

**Answer :** Advantage: Polyploidy often exhibit hybrid vigour and increased tolerance to biotic and abiotic stresses.  
Disadvantage: Polyploidy results in reduced fertility due to meiotic error resulting in seedless varieties.

11) What is acclimatization?

**Answer :** Adjustment or adaptation of introduced plant in the changed environment.

12) List out bacteria and fungi that solubilize phosphate.

**Answer :** **Bacteria:** Bacillus subtilis, Pseudomonas straita.

**Fungi:** Penicillium, Aspergillus.

13) What is NBT?

**Answer :** NBT (New Breeding Techniques) are a collection of methods that increase the new traits in plant breeding.

14) Write the uses of Trichoderma.

**Answer :** It is a biocontrol agent for the control of plant disease, ability for root growth, crop productivity, resistance to environment, uptake of nutrients.

15) What is AM? Mention its significance.

**Answer :** AM (Arbuscular mycorrhizae) - symbiotic association between Phycomycetes fungi and angiosperm. Make the angiosperm to absorb phosphates from the soil.

16) What is organic agriculture? (or) Define Organic farming.

**Answer :** (i) Organic farming is an alternative agricultural system which originated early in the twentieth century in reaction to rapidly changing farming practices.

(ii) It is a production system that sustains the health of the soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions rather than the use of inputs with adverse effects.

17) How to do test for homozygosity of a trait in plants.

**Answer :** Crossing an individual of unknown genotype with a homozygous recessive, used to identify whether an individual is homozygous or heterozygous for dominant character. This is called test cross.

18) Differentiate rhizobium from azolla as biofertilizers.

**Answer :** **Preparation of Bio-pest repellent**

(i) Pluck leaves from the neem tree and chop the leaves finely.

(ii) The chopped up leaves were put in a 50-liter container and fill to half with water put the lid on and leave it for 3 days to brew.

(iii) Using another container, strain the mixture which has brewed for 3 days to remove the leaves, through fine mesh sieve. The filtrate can be sprayed on the plants to repel pests.

19) What is known as germplasm collection?

**Answer :** In plant breeding programmes, the entire collection (of plants/seeds) having all the diverse alleles for all genes in a given crop.

20) Write short notes on Sonara 64.

**Answer :** Sharbati Sonora is a mutant variety of wheat, which is developed from Mexican variety (Sonora 64) by irradiating of gamma rays.