
CBSE Test Paper 04
Ch-9 Strategies for Enhancement in Food Production

1. “Blue revolution” is related to
 - a. Clean water
 - b. Fish
 - c. Milk
 - d. Oil
2. Haploid plantlets can be produced by
 - a. Meristem culture
 - b. Cotyledon culture
 - c. Pollen culture
 - d. Embryo culture
3. Which of the following algae can be used as single cell protein?
 - a. Spirulina
 - b. Chara
 - c. Anabaena
 - d. Nostoc
4. A group of animals related by descent and similar characters like appearance, size and configuration are known as
 - a. Family
 - b. Breed
 - c. Class
 - d. Variety
5. Continued close inbreeding
 - a. Development of new variety
 - b. Increased fertility and productivity
 - c. Development of impure line
 - d. Reduce fertility and productivity
6. Picking up plants with superior phenotype for further propagation is
 - a. Introduction
 - b. Mass selection
 - c. Hybrid vigour

d. Pure line selection

7. List any two economically important products for humans obtained from *Apis indica*.
8. Name two diseases caused by fungus in crops.
9. Why is the south Indian sugarcane preferred by agriculturalists?
10. Define SCP. How SCP can be better proteins than convention diet proteins.
11. What is cross breeding? What advantages does it confer? Give one example.
12. Define heterosis.
13. Which part of the plant is best suited for making virus free plants and why?
14. Name the methods employed in animal breeding. According to you which of the methods is best. Why?
15. Find out what the various components of the medium used for propagation of an explain in vitro are?

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Answer

1. b. Fish, **Explanation:** Blue revolution is related to fish production. This revolution is brought about by using aquaculture and pisciculture on the line of green revolution for wheat production.
2. c. Pollen culture, **Explanation:** Pollen grains are haploid cells as they contain half the number of chromosome as present in normal cells. Pollen grain is formed by reduction division in which chromosome number reduces to half.
3. a. Spirulina, **Explanation:** Spirulina is single celled algae that can be easily grown in starch containing medium life waste water from potato processing plants. It contains high quantity of protein that can be easily used by human beings.
4. b. Breed, **Explanation:** Breed is a group of animals related by descent and similar characters like appearance, size and configuration. All the animals falling to same breed are capable to breed in between.
5. d. Reduce fertility and productivity, **Explanation:** Continued close breeding leads to reduced fertility and productivity. Close breeding for successive times causes pure line establishment.
6. b. Mass selection, **Explanation:** Mass selection is a simplest, common and oldest method of crop improvement, in which large number of plants of similar superior phenotype are selected and their seeds are harvested and mixed together to constitute the new variety.
7.
 - i. **Honey:** The honey is a neutral, natural valuable tonic for human body. Honey is a sweet, viscous edible fluid
 - ii. **Bee wax:** Bee wax is made of secretion of worker bees' abdominal glands. It is a product of industrial importance. It is used in the manufacture of many items including cosmetics, shaving cream, face cream, ointments, plasters, carbon papers, pencils, electric goods, toothpaste, lotions, furniture-polishes, boot-

polishes, protective coating, ink paints and candles. It is also used in model and mould making and in printing industry. It is also used in the laboratory for microtomy with the common wax for block preparation of the tissues.

8.

i. Brown rust of wheat

ii. Red rot of sugarcane

9. South Indian sugarcane has thicker stems, higher sugar content and yield.

10. The cell from microorganisms such as bacteria, yeasts, filamentous algae treated in various ways and used as food, are called SCP.

SCP provides a protein rich supplement in human diet e.g. 250 kg cow produces 200 g of protein per day. In same time 250 g of microorganism like *Methylophilus methylotrophus* can produce 25 tonnes of protein because of its high rate of biomass production and growth.

11. Cross breeding is the mating between animals of different breeds. It involves mating of superior males of one breed with superior females of another breed.

This method allows the desirable qualities of two different breeds to be combined. Thus the hybrid progeny will have the desirable traits of both the breeds.

Example: Hisardale is a new breed of sheep developed by crossing Bikaneri ewes and Marino rams.

12. Heterosis, hybrid vigor, or outbreeding enhancement, is the improved or increased function of any biological quality in a hybrid offspring. The adjective derived from heterosis is heterotic

It is phenotypic superiority of the hybrid over either of its parent in one or more traits.

13. The apical and axillary's meristem are the best suited parts of plant for the production of virus free plants. These parts are generally free from virus due to the absence of vascular tissue through which viruses are transported.

14. The methods employed in animal breeding are:

- i. Inbreeding.
- ii. Out breeding such as out crossing, cross breeding and inter specific hybridization.
- iii. Controlled breeding such as artificial insemination and multiple ovulation embryo transfer technique.

Artificial insemination method of controlled breeding is best because it ensures good quality progeny and it is economic also.

15. The major components of the medium are water, inorganic salts, sucrose (source of carbon and energy), vitamins, amino acids and growth hormones like auxins, cytokinins etc.

Other compounds like casein, coconut milk, yeast extract etc. may be added for specific purposes.

- If required a gelling agent agar is added to the liquid medium for its solidification.