



BIOLOGY

BOOKS - OSWAAL BIOLOGY

(KANNADA ENGLISH)

STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION

**Topic 1 Animal Husbandry Very Short Answer
Questions**

1. Millions of chickens were killed in West Bengal, Orissa and Maharashtra recently. What was the reason?



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2. In animal husbandry, if two closely related animals are mated for a few generations, it results in loss of fertility and vigour. Why is it so?



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3. Name a new breed of sheep developed in Punjab by cross breeding technique.



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4. Explain the following terms :

- (a) Inbreeding depression
- (b) Interspecific hybridisation
- (c) Biofortification
- (d) Micropropagation
- (e) Somaclones.



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5. Name an animal which is the progeny of interspecific hybridisation between donkey and horse.



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6. What is plant breeding?



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7. Mention the strategy used to increase homozygosity in cattle for desired character.



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8. Name a technology that has successfully increased herd size of cattle in a short time.



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9. Define apiculture?





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10. Define aquaculture.



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11. Mention any two common fresh water fishes.



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12. What is green revolution?



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13. Name two marine fish varieties.



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14. List any two economically important products for humans obtained from *Apis indica*.



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Topic 1 Animal Husbandry Short Answer Questions I

1. What happens if there is a continuous inbreeding in animals? Discuss the strategy to overcome the problem associated with continuous inbreeding.



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2. What is artificial insemination? Mention any two advantages.



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3. How can we improve the success rate of fertilisation during artificial insemination in animal husbandry programmes?



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4. Name any four poultry birds which are used for food and eggs.



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5. Write any four proper poultry farm management.



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6. Name two major types of animal breeding experiments.



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7. Name the breeds used to develop a new breed of sheep Hisardale in Punjab.



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8. Name any two controlled breeding experiments in animals to improve the quality of progeny.



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9. What is blue revolution?



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10. Mule is a progeny obtained by interspecific hybridisation. Who are the parents of mule?



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11. Name any two fungal diseases in plants.



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12. Name any two viral diseases in plants.



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13. Mention any two advantages of inbreeding.



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14. Give one example of a crop in which interspecific hybridization is practiced and mention one advantage derived from it.



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Topic 1 Animal Husbandry Short Answer Questions II

1. What is Bee - Keeping? Write any four points for a successful Bee - Keeping?



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2. Brief note on (i) inbreeding (ii) out breeding (iii) crossbreeding.



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3. Discuss the role of fishery in enhancement of food production.



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4. What is apiculture? How is it important in our lives?



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5. Explain in brief the role of animal husbandry in human welfare.



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6. Give one example of the disease caused each by fungi, bacteria and viruses in crop plant.



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Topic 1 Animal Husbandry Long Answer Type Questions

1. Write the steps involved in multiple ovulation and embryo transfer.



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2. Differentiate out- crossing, cross breeding and interspecific hybridisation.



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3. (a) Discuss the MOET technique of animal breeding.

(b) Differentiate between inbreeding and outbreeding.



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4. Differentiate between inbreeding and outbreeding.



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5. If your family owned a dairy farm, what measures would you undertake to improve the quality and quantity of milk production?



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6. Explain five advantages of inbreeding.



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7. Explain the steps involved in MOET.





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Topic 2 Plant Breeding Single Cell Protein And Tissue Culture Very Short Answer Questions

1. What is micropropagation?



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2. Plant cells are totipotent. Why?



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3. What is totipotency?



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4. Name a Nobel Laureate who developed semi dwarf variety of wheat.



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5. Name an organism that causes black rust of crucifer.



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6. Explain what is meant by biofortification.



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7. What are single cell protein? Mention their significance.

b) Name any two organisms that are used as single cell protein.



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8. Name a micro-organism that can produce large amount of single cell protein.



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9. Give the meaning of the term explant.



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10. Write the names of two semi-dwarf and high yielding rice varieties developed in India after 1966.



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11. Give the meaning of the term somaclones.



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12. What is somatic hybridization?



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13. Give an example for a plant which is an outcome of somatic hybridisation.



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14. A plant growing in a natural habitat infected by virus. Which part of the plant do you suggest which is suitable to get a viral free plant through tissue culture.





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15. What is the economic value of spirulina?



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16. Name the Indian variety of rice patented by an American company.



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17. Why South Indian sugarcanes are preferred by agriculturists?



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18. Sucrose is necessary in the plant tissue culture nutrient medium. Give reason.



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19. What is meant by 'hidden hunger'?



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20. Expand SCP .



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21. A protoplast of tomato plant is fused with that of potato to form a new hybrid plant. Name the hybridization technique involved here.



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22. List the various methods used for crop improvement .



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23. Name two plants which have been produced by artificial selection?



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Topic 2 Plant Breeding Single Cell Protein And Tissue Culture Short Answer Type Questions I

1. Write a note on single cell protein.



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2. With reference to tissue culture, what is (i) Totipotency (ii) Somatic hybrids.



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3. Write a note on selection and testing of superior recombinants in plant breeding.



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4. Mention any four applications of plant tissue culture.



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5. Find out the various components of the medium used for propagation of an explant in invitro are?



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6. Fill in the blanks :



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7. Life style diseases are increasing alarmingly in India. We are also dealing with large scale malnutrition in the population. Is there any method by which we can address both these problems?



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8. What is meant by germplasm collection?
What are its benefits?



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9. Suggest two features of plants that will prevent insect and pest infestation.



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10. What are the physical barriers of a cell in the protoplast fusion experiment? How are the barriers overcome?



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11. Name this emerging area of research.

Explain its benefits.



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12. Write the four traits for which plant breeding is done.



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13. Mention any four improving objectives of biofortification.



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14. Name two plants used to obtain pomato.



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15. Name any two enzymes required to isolate plant protoplasts.



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16. What is meant by germplasm collection?

What are its benefits?



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17. Name the improved characteristics of wheat that helped India achieve green revolution.



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18. How are biofortified maize and wheat considered nutritionally improved?



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19. Explain the advantage of cross-breeding of the two species of sugar cane in India.



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20. Name a sugarcane variety that is native to North India and South India.



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Topic 2 Plant Breeding Single Cell Protein And Tissue Culture Short Answer Type Questions li

1. Give two examples of bio fortified crops. What benefits do they offer to the society?



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2. Name the three improved characteristics of wheat that helped India achieve green revolution.



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3. What are the advantages of tissue culture?



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4. What are the main factors on which the disease development in a plant depends?



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5. IARI, New Delhi has developed some biofortified plants which are rich in some nutrients. Name the nutrients and the plant in which they are derived.



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6. Write the components that are used in the tissue culture nutrient medium.



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Topic 2 Plant Breeding Single Cell Protein And Tissue Culture Long Answer Type Questions

1. Write the steps involved in multiple ovulation and embryo transfer.



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2. Differentiate out- crossing, cross breeding and interspecific hybridisation.



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3. Briefly describe the various steps involved in plant breeding.



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4. What is meant by the term 'breed'? What are the objectives of animal breeding?



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5. Name the methods employed in animal breeding. According to you which of the methods is the best? Why?



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6. Name any five hybrid varieties of crop plants which have been developed in India.



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Topic 2 Plant Breeding Single Cell Protein And Tissue Culture Multiple Choice Questions

1. The chances of contacting bird flu from a properly cooked (above $100^{\circ}C$) chicken and egg are:

A. Very high

B. High

C. Moderate

D. None

Answer: C



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2. A group of animals which are related by descent and share many similarities are referred to as :

A. Breed

B. Race

C. Variety

D. Species

Answer: B



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3. Inbreeding is carried out in animal husbandry because it :

- A. Increases vigour
- B. Improves the breed.
- C. Increases heterozygosity.
- D. Increases homozygosity.

Answer: D



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4. Sonalika and Kalyan Sona are varieties of :

A. Wheat

B. Rice

C. Millet

D. Tobacco

Answer: B



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5. Which one of the following is not a fungal disease?

A. Rust of wheat

B. Smut of Bajra.

C. Black rot of crucifers.

D. Red rot of sugarcane.

Answer: C



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6. In virus-infected plants the meristematic tissues in both apical and axillary buds are free of virus because :

- A. The dividing cells are virus resistant.
- B. Meristems have anti-viral compounds.
- C. The cell division of meristems are faster than the rate of viral multiplication.
- D. Viruses cannot multiply within meristem cell (s).

Answer: B



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7. Several South Indian states raise 2-3 crops of rice annually. The agronomic feature that makes this possible is because of

- A. Shorter rice plant
- B. Better irrigation facilities.
- C. Early yielding rice variety.
- D. Disease resistant rice variety.

Answer: D



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8. Which one of the following combination would a sugarcane farmer look for in the sugarcane crop?

A. Thick stem, long internodes, high sugar content and disease resistant.

B. Thick stem, high sugar content and profuse flowering.

C. Thick stem, short internodes, high sugar content, disease resistant.

D. Thick stem, low sugar content, disease resistant.

Answer: A



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9. Fungicides and antibiotics are chemicals that:

A. Enhance yield and disease resistance.

B. Kill pathogenic fungi and bacteria, respectively.

C. Kill all pathogenic microbes.

D. Kill pathogenic bacteria and fungi respectively.

Answer: B



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10. Use of certain chemicals and radiation to change the base sequences of genes of crop plants is termed as:

A. Recombinant DNA technology.

B. Transgenic mechanism.

C. Mutation breeding.

D. Gene therapy.

Answer: C



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11. The scientific process by which crop plants are enriched with certain desirable nutrients is called :

A. Crop protection.

B. Breeding

C. Bio-fortification.

D. Bio-remediation.

Answer: C



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12. The term 'totipotency' refers to the capacity of a :

A. Cell to generate whole plant.

B. Bud to generate whole plant.

C. Seed to germinate.

D. Cell to enlarge in size.

Answer: A



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13. Given below are a few statements regarding somatic hybridization. Choose the correct statements.

(i) Protoplasts of different cells of the same plant are fused.

(ii) Protoplasts from cells of different species can be fused.

(iii) Treatment of cells with cellulase and pectinase is mandatory.

(iv) The hybrid protoplast contains characters of only one parental protoplast.

A. (ii) and (iii)

B. (i) and (ii)

C. (iii) and (ii)

D. (ii) and (iii)

Answer: A



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14. An explant is :

A. Dead plant.

B. Part of the plant.

C. Part of the plant used in tissue culture.

D. Part of the plant that expresses a specific gene.

Answer: C



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15. The biggest constraint of plant breeding is

:

A. Availability of desirable gene in the crop
and its wild relatives.

B. Infrastructure

C. Trained manpower

D. Transfer of genes from unrelated
sources.

Answer: A



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16. Lysine and tryptophan are :

A. Proteins

B. Non-essential amino acids

C. Essential amino acids

D. Aromatic and no acids.

Answer: B



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17. Micro-propagation is :

A. Propagation of microbes in vitro

B. Propagation of plants in vitro

C. Propagation of cells in vitro

D. Growing plants on smaller scale.

Answer: C



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18. Protoplast is :

A. Another name for protoplasm

B. An animal cell

C. A plant cell without a cell wall

D. A plant cell.

Answer: C



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19. To isolate protoplast, one need:

A. Pectinase

B. Cellulase

C. Both pectinase and cellulase

D. Chitinase

Answer: C



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20. Which one of the following is a marine fish?

A. Rohu

B. Hilsa

C. Catla

D. Common Carp

Answer: B



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21. Which one of the following products of apiculture is used in cosmetics and polishes?

A. Honey

B. Oil

C. Wax

D. Royal jelly

Answer: C



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22. More than 70 per cent of livestock population is in:

A. Denmark

B. India

C. China

D. India and China

Answer: B



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23. The agriculture sector of India employs :

A. 60 per cent of the population

B. 70 per cent of the population

C. 30 per cent of the population

D. 62 per cent of the population.

Answer: D



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24. 33 percent of India's (Gross Domestic Product) comes from :

A. Industry

B. Agriculture

C. Export

D. Small-scale cottage industries.

Answer: B



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25. A collection of all the alleles of all the genes of a crop plant is called :

A. Germplasm collection

B. Protoplasm collection

C. Herbarium

D. somaclonal collection

Answer: A



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