

Chapter 9

STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION

ONE MARK QUESTIONS:

1. What is animal husbandry? (K)
2. What is dairying? (K)
3. What is dairy farm management? (K)
4. Name an improved breed of cow. (K)
5. What is poultry? (K)
6. Name an improved breed of poultry bird. (K)
7. What is a breed? (K)
8. What is the aim of animal breeding? (K)
9. What is inbreeding? (K)
10. Mention the strategy that is used to develop purelines in cattle? (K)
11. Mention the strategy that is used to increase homozygosity in cattle for desired character. (K)
12. Name the kind of breeding which exposes harmful recessive genes? (K)
13. How harmful recessive genes are eliminated in inbreeding? (U)
14. What is inbreeding depression? (K)
15. How is inbreeding depression overcome? (A)
16. What is out breeding? (K)
17. What is out-crossing? (K)
18. What is cross-breeding? (K)
19. What is interspecific hybridization? (K)
20. Name a breed of sheep developed in Punjab by crossing Bikaneri ewes and Marino ram. (K)
21. How was *Hisardale* breed developed by cross breeding technique? (U)
22. Give an example for an interspecific hybrid animal. (K)
23. What is artificial insemination? (K)
24. Why cow is administered hormones in MOET? (A)
25. What do you mean by super ovulation? (K)
26. At which stage the fertilized eggs are recovered and transferred to surrogate mother in MOET technique? (U)
27. Name the technology that can successfully increase the herd size of cattle in a short time. (K)
28. Define bee keeping or Apiculture. (K)
29. Name the most common species reared in India for bee keeping. K
30. List any one economically important products for human obtained from *Apis indica*. U
31. What is fishery? (K)
32. Name a common edible marine fish. (K)
33. Name a common edible fresh water fish. (K)
34. What is plant breeding? (K)
35. What is germplasm collection? (K)
36. Expand IRRI. (K)
37. Name the Nobel Laureate who developed semi dwarf variety of wheat. (K)

38. Name any one disease resistant and high yielding variety of wheat introduced in India. (K)
39. Write the scientific name of south Indian sugarcane. (K)
40. Write the scientific name of north Indian sugarcane. (K)
41. How is north Indian sugarcane inferior to south Indian sugarcane? (U)
42. Give an example for viral pathogen of cultivated crops. (K)
43. Give an example for fungal disease of crop plants. (K)
44. Give an example for bacterial disease of cultivated crops. (K)
45. Name the wheat variety that is resistant to hill bunt. (K)
46. Name the Brassica variety that is resistant to white rust. (K)
47. Name the cauliflower variety that is resistant to black rot. (K)
48. Name the cowpea variety that is resistant to bacterial blight. (K)
49. Name the chilli variety that is resistant to *Chilly mosaic virus*. (K)
50. Name the disease for which *Pusa Swarnim* (Karan rai) variety of *Brassica* is resistant. (K)
51. Name the disease for which *Pusa Shubra* variety of cauliflower is resistant. (K)
52. Name the disease for which *Pusa Komal* variety of cowpea is resistant. (K)
53. Name the disease for which *Sada Bahar* variety of chilli is resistant. (K)
54. Name the diseases for which *Himgiri* variety of wheat is resistant. (K)
55. What is mutation breeding? (K)
56. Name the pathogen to which *Parbhani Kranti* is resistant. (K)
57. Name the variety of bhindi or lady's finger (*Abelmoschus esculentus*) that was obtained by mutation breeding. (K)
58. Name the insect pest for which *Pusa gaurav* variety of *Brassica* crop is resistant. (K)
59. Name the insect pest for which *Pusa sem 2* variety of flat bean crop is resistant. (K)
60. Name the insect pest for which *Pusa sawani* variety of bhindi crop is resistant. (K)
61. Name the improved variety of *Brassica* which is resistant to aphids. (K)
62. Name the improved variety of flat bean which is resistant to jassids, aphids and fruit borers. (K)
63. Name the improved variety of bhindi which is resistant to fruit and shoot borer. (K)
64. Define hidden hunger. (K)
65. Define biofortification. (K)
66. What are single cell proteins? (K)
67. Give an example for an organism that is used to obtain single cell proteins. (K)
68. Name an alternative source of protein for animal and human nutrition. (K)
69. Name the microorganism having high rate of biomass production and growth which is used for the production of single cell proteins. (K)
70. Why *Methylophilus methylotrophus* is a preferred microorganism in the production of single cell proteins? (A)
71. What is tissue culture? (K)
72. Define the term totipotency. (K)
73. Why are plant cells considered as totipotent? (A)
74. A part of the internode of a plant can give rise to thousands of plants through tissue culture. Which property of plant is responsible for this? (A)
75. Define the term explant. (K)
76. Sucrose is necessary in the plant tissue culture nutrient medium. Give reason. (A)
77. Mention a growth regulator used in tissue culture nutrient medium. (K)
78. What is micropropagation? (K)

79. Name the technique employed to get large number of plants in a short period. (K)
80. Define the term somaclones. (K)
81. Why plants obtained through micropropagation are termed as somaclones? (A)
82. How are virus-free plants obtained by tissue culture technique? (A)
83. Plants raised by tissue culture using meristem as explants are virus-free. Why? (A)
84. What are somatic hybrids? (K)
85. What is somatic hybridization? (K)
86. A protoplast of tomato plant is fused with that of potato to form a new hybrid plant. Name the hybridization technique involved here.

TWO MARK QUESTIONS:

1. Name any two poultry birds which are used for food and eggs. (K)
2. Write any two advantages of inbreeding. (U)
3. What is inbreeding? Mention the drawback of inbreeding? (K)
4. Write the reason for inbreeding depression. How can it be overcome? (U)
5. What happens if there is continuous inbreeding in animals? Discuss the strategy to overcome the problem associated with continuous inbreeding. (U)
6. Write the difference between inbreeding and outbreeding. (U)
7. Differentiate between outcrossing and crossbreeding. (U)
8. What is interspecific hybridization? Give suitable example. (K)
9. Name two major controlled breeding techniques employed in animal breeding. (K)
10. Name the breeds used to develop a new breed of sheep called *Hisardale*. (K)
11. Why bee hives are kept in a crop field during flowering period? (A)
12. Give any two examples for edible fresh water fishes. (K)
13. Give any two examples for edible marine water fishes. (K)
14. List any two edible aquatic animals other than fishes. (K)
15. Name the two culture techniques which can increase production of both marine and fresh water plants and animal. (K)
16. Write any four traits for which plant breeding is done. (K)
17. Mention the drawbacks of cross hybridization among selected parents in plant breeding? (K)
18. Name two high yielding wheat varieties which were introduced in India in 1963. (K)
19. Which are the two rice varieties that were used to produce semi dwarf rice variety in 1966 in our country? (K)
20. Name two high yielding semi dwarf rice varieties developed in India. (K)
21. Why *Sonalika* and *Kalyan* varieties are superior to the traditional varieties of wheat? (A)
22. Why is the south Indian sugarcane, *Saccharum officinarum*, preferred by agriculturists? (A)
23. Name two species of sugar cane of India which were hybridized to get a better variety. (K)
24. What do you mean by resistance of host plant to diseases? (K)
25. Name any two fungal diseases in plants. (K)
26. Name any two viral diseases in plants. (K)
27. How are disease resistant varieties advantageous over traditional varieties of crop plants in plant breeding? (A)
28. Name any two diseases for which *Himgiri* variety of wheat is resistant. (K)
29. What are the effects of diet which lacks essential micronutrients? (K)
30. Mention any two objectives of biofortification. (K)

31. How biofortified maize and wheat are considered as nutritionally improved? (A)
32. Name any two microorganisms which are used for the production of single cell proteins. (K)
33. Write the ingredients that are used in the tissue culture nutrient medium. (U)
34. Name two growth regulators used in plant tissue culture nutrient medium. (K)
35. With reference to tissue culture, define the terms totipotency and explant. (K)
36. With reference to tissue culture, define the terms totipotency and micropropagation. (K)
37. With reference to tissue culture, define the terms totipotency and somaclones. (K)
38. With reference to tissue culture, define the terms totipotency and meristem culture. (K)
39. With reference to tissue culture, define the terms totipotency and somatic hybrid. (K)
40. With reference to tissue culture, define the terms totipotency and somatic hybridisation. (K)
41. With reference to tissue culture, define the terms explant and micropropagation. (K)
42. With reference to tissue culture, define the terms explant and somaclones. (K)
43. With reference to tissue culture, define the terms explant and meristem culture. (K)
44. With reference to tissue culture, define the terms explant and somatic hybrid. (K)
45. With reference to tissue culture, define the terms explant and somatic hybridisation. (K)
46. With reference to tissue culture, define the terms micropropagation and somaclones. (K)
47. With reference to tissue culture, define the terms micropropagation and meristem culture. (K)
48. With reference to tissue culture, define the terms micropropagation and somatic hybrid. (K)
49. With reference to tissue culture, define the terms micropropagation and somatic hybridisation. (K)
50. With reference to tissue culture, define the terms somaclones and meristem culture. (K)
51. With reference to tissue culture, define the terms somaclones and somatic hybridisation. (K)
52. With reference to tissue culture, define the terms meristem culture and somatic hybrid. (K)
53. With reference to tissue culture, define the terms meristem culture and somatic hybridisation. (K)
54. Differentiate between somaclones and somatic hybrids. (U)

THREE MARK QUESTIONS:

1. Mention the measures to be taken to realize the yield potential in cattle in a dairy farm. (K)
2. What is inbreeding? Describe the breeding strategy employed in inbreeding. (U)
3. What is inbreeding? Write any two advantages of inbreeding. (K)
4. Differentiate out-crossing, cross breeding and interspecific hybridization. (U)
5. Differentiate inbreeding, outbreeding and cross breeding. (U)
6. Explain cross breeding with an example. (U)
7. Explain the steps involved in MOET. (U)
8. List the characteristics of *Saccharum officinarum* and *Saccharum barberi*. What are the combined desirable characters obtained by hybridizing these two varieties? (U)
9. List the diseases caused by fungi in cultivated crops. (K)
10. Write the disease resistant crop varieties for the following diseases. (K)
 - (a) White rust (b) Black rot (c) Hill bunt
11. Write the resistant crop varieties for the following insect pests: (K)
 - (a) Aphids (b) Jassids (c) Shoot borer
12. List three examples for morphological, biochemical or physiological characters which give natural insect or pest resistance in host crop plants. (K)
13. What is biofortification? List two examples for biofortified crop plants and their importance. (U)

14. Write any three objectives of plant breeding for improved nutritional qualities. (U)
15. Give any three examples for biofortified plants with their significance. (K)
16. Mention any three biofortified vegetable yielding plants with their significance. (K)
17. Write three applications of plant tissue culture. (U)
18. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Totipotency (c) Micropropagation
19. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Totipotency (c) Somaclones
20. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Totipotency (c) Somatic hybrid
21. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Totipotency (c) Meristem culture
22. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Totipotency (c) Somatic hybridization
23. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Micropropagation (c) Somatic hybrid
24. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Micropropagation (c) Somaclone
25. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Micropropagation (c) Somatic hybrid
26. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Micropropagation (c) Meristem culture
27. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Micropropagation (c) Somatic hybridisation
28. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Somaclones (c) Soamatic hybrid
29. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Somaclones (c) Meristem culture
30. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Somaclones (c) Soamatic hybridisation
31. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Soamatic hybrid (c) Meristem culture
32. With reference to tissue culture, explain the following: (K)
 - (a) Explant (b) Soamatic hybrid (c) Somatic hybridization

FIVE MARK QUESTIONS:

1. List out any five aspects of dairy farm management. (K)
2. Define poultry. List out any four components of poultry farm management. (K)
3. (a) What is artificial insemination? What is its advantage in animal breeding? 2M (U)
(b) Discuss the MOET technique of animal breeding. 3M (U)
4. Write five requirements for successful Bee keeping. K
5. What is bee-keeping? Write any four points to be followed for successful bee-keeping. (K)
6. What is artificial insemination? What is its significance? Explain a controlled breeding technique in which artificial insemination is employed. (U)
7. Describe the steps involved in breeding a new variety of genetic crop. (U)

8. What is biofortification? Mention its objectives. Mention two examples for biofortified crops with their importance. (U)
9. With reference to tissue culture, explain the following: (U)
(a) Explant (b) Totipotency (c) Somaclones (d) Somatic hybrids (e) Micropropagation.
10. List three objectives of biofortification. Why are biofortified maize and wheat varieties considered as nutritionally improved varieties? (A)
