BIOLOGY

BOOKS - PRADEEP BIOLOGY (HINGLISH)

STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION

Exercises With Answer

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

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

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

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

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6. Discuss the role of fishery enhancement of food production.

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7. Briefly describe various steps involved in plant breeding.

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8. Explain what is meant by biofortification ?

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9. Which part of the plant is best suited for making virus-free plants and why?

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10. What is the major advantage of producing plants by micropropagation ?

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11. Find out the various components of the medium used for propagation of an explants in vitro are ?

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

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Additional Questions Very Short Answer Type Questions

1. Which of the following is most commonly used for creation of genetic variation ?

A. Polyploidy

B. Hybridisation

C. Mutation

D. Genetic engineering

Answer: B

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2. The use of colchicines is involved in production of

A. Somaclonal variation

B. Haploids

C. Polyploids

D. Hybrids

Answer: C

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3. Hybrids are produced by crossing inbreds in which of the following ?

A. Maize

B. Poultry

C. Swine

D. All of these

Answer: D

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4. Which of the following is not correct about plant introductions ?

A. They give us crops

B. They give us new varieties

C. There is rist of entry of disease, etc. into the country

D. Quarantine is not necessary

Answer: D

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5. Mule is a product of

A. Selection

B. Inbreeding

C. Interspecific hybridisation

D. Cross-breeding

Answer: C

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6. What is germplasm ?

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7. Define gene pool.

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8. Name a green alga used in production of single cell protein.

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9. List the various methods used for crop improvement.

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10. Which is the oldest method of crop improvement ?

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11. Embryo culture is used for :

A. establishing suspension culture

B. recovery of interspecific hybridisation

C. somatic hybridisation

D. haploid production

Answer: B

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12. Define the term 'surface sterilisation'.

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13. Difine the term 'subculture'.

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14. Define the term-(a) somatic embryo and (b) somatic hybrids.

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15. What is the purpose of anther culture ?

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16. Whar are somaclonal variations ?

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17. What is a suspension culture ?

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18. What is totipotency ?

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19. What is the common name of Triticum monococcum ?

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20. Name two plants which have been produced by artificial selection.

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21. what is emasculation ? Why and when is it done ?

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22. The tetraploid ancestor of the modern wheat is :

A. Triticum monococcum

B. Triticum durum

C. Aegilops speltoides

D. Aegilops squarrosa

Answer: B

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

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24. What is the econonic value of Spirulina ?

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25. Millione of chickens were killed in West Bengal, Assam, Orissa and Maharashtra. What was the reason ?

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26. Why are proteins synthesised by Spirulina called single cell proteins ?

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27. Explain what is meant by biofortification.

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28. What is inbreeding depression ?

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29. White leghorn breed is of

A. Cow

B. Buffalo

C. Camel

D. Fowl

Answer: D

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30. Which is a fresh water fish ?

A. Hilsa

B. Sardines

C. Pomfrets

D. None of these

Answer: D

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31. SINGLE CELL PROTEIN (SCP)

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32. An explant is

A. dead plant

B. part of the plants

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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33. Scientific name of yeast is . . . . . .

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34. Write the importance of MOET.

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35. Name any two common Indian millet crops. State one characteristic of millets that has been improved as a result of hybrid breeding so as to produce high yieding millet crops.

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36. Mention the role of 'genetic mother' in MOET.

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37. A herd of cattle is showing reduced fertility and productivity . Provide one reason and one suggestion to overcome this problem.

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Additional Questions Short Answer Type Question

1. What is selection ? Name the two methods of selection.

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2. What are intervarietal and interspecific hybridisations ?

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3. Aims And Objectives Of Plant Breeding

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4. List the features in the wild plants selected by man for his own benefit.

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5. Give brief account of micropropagation.

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6. What do you mean by cloning ?

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7. Why hardening is essential for establishment of plantlets in the field ?

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8. Meristem Culture

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9. What is dedifferentiation and redifferentiation ?

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10. Name any two source organisms of ager. List any four areas in which agar has wide application.

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11. Honey collection improves when beehives are kept in crop-fields during flowering season. Explain.

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12. What is interspecific hybridisation ? Explain the term by taking an example of animal breeding.

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13. A. What is callus ?

B. What do you understand by totipotency of cell ? Name the scientist who coined the term.

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14. A. What is an embryoid ? How it is different from embryo ?

B. What is a clone ?

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15. what is aquaculture ? Give example of an animal that can be multiplied by aquaculture .

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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 to achieve green revolution .

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18. the culture medium (nutrient medium) can be as a highly enerched laboratory soil'. Justify the statement.

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19. What is interspecific hybridization ? Write one example of it.

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20. Differentiate between piscilture and aquaculture .

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21. How can healthy potato plants to be obtained from a desired potato variety which is viral infected? Explain.

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22. State the disadvantage of inbreeding among cattle. How it can be overcome?

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23. Enumerate ate four objectives for improving the nutritional quality of different crops for the health benefits of the human population by the-process of "Biofortification".

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24. "Large scale cultivation of spirullina is highly advantageous for human population."Explain giving two reasons.

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25. In an agricultural field there is a prevalance of the following organisms and crop diseases which are affecting the crop yield badly:

a) White rust

b) Leaf and strips rust

dc) Black rot

d) Jassids

Recommend the varieties of crops the farmers should grow to get rid of te existing problem and thus improve the crop yeild

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26. By taking two examples how has bio-fortification helped in improving food quality.

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27. You have obtained a high yielding variety of tomato. Name and explain the procedure that ensures retention of the desired characteristics repeatedly in large populations of future generations of the tomato crop.

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28. Differentiate between out-crossing and cross breeding

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29. Why are microbes like Spirulina being produced on a commercial scale ? Mention its two advantages.

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30. A farmer maintained beehives in his Brassica field during its flowering season. How will he be benefitted ?

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Additional Questions Short Answer Type Question Fill In The Blanks

1. Shoot regeneration is promoted by a . . . . . whereas . . . . . regeneration is promoted by an auxin.

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2. . . . . . are cultured to obtain haploids

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3. The callus and . . . . . cultures can be used to achieve cell biomass.

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4. An . . . . . is excised from its original location and used for initiating a culture.

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5. A . . . . . embryo develops from a somatic cell.

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Short Answer Question

1. Enlist the application of tissue culture.

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2. Explain the terms -(i) Explant, (ii) Cellus, (iii) Micropropagation.

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3. Write short note on nutritional quality.

Watch Video Solution

4. Write explanatory onte on single cell protein.

Watch Video Solution

5. Write a note on mutational breeding.

Watch Video Solution

6. What is the role of selection in crop improvement.

Watch Video Solution

7. What is the role of colchicine in polyploid breeding.

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8. Write a note on origin of Bread wheat.

Watch Video Solution

9. Write the methods plant breeding for production of disease resistance in plants.

Watch Video Solution

10. What is biofortification ?

Watch Video Solution

11. Give the methods of breeding for nutritional quality.

Watch Video Solution

12. Write a brief account of daily farm management.

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13. Write a note on apiculture.

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14. What is the meaning of sterilization ? Why sterilization is essential in tissue culture and recovery of complete plants.

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15. What is anther culture ? Mention its application.

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16. Explain the efforts which must be put in to improve, hygiene and milk yield of cattle in a dairy farm.

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17. (i) Mention the property that enables the explants to regenerate into a new plant.

(ii) A banana herb is virus-infected. Describe the method that will help in obtaining healthy banana plants from this diseased plant.

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18. A. Write the name of the any long chain saturated fatty acid which is not good for human health.

B. Name the three lysine-rich varieties of maize developed in India.

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19. Make correction wherever you mistake in spellings/words in the followong paragraph/sentence.

A. A successful breeding for disease susceptability depends mainly on two factors : (i) a good source of resistance, and (ii) a dependable disease test, all the grown under conditions in which a resistant plant is exoected to develop disease. This allows a clear cut identification of the disease resistant plants, which are then discarded.

B. Humans have produced a new autopolyloid crop called triticale in the following manner. Autoteraploid wheat (Triticum Sativum)

was hybridised with rye (Seeale cereale). The chromosome number of the resulting F_1 was trippled to produce triticale.

C. Phenotype is genetic make up of an individual or a variety. In contrast, the genotype is the observable features of an organism.

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20. Match the items in column (A) with column (B). Each point in column (A) has minimum one match in column (B) and maximum three matches.

Column(A)	Column(B)
1. Triticale	(a) Glucosinolates
2. Inbreeding	(b) Colchicine
3. Mutagens	(c) Homozygosity
4. Autopolyploidy	(d) Sodium azide
5. Antinutrtional factors	(e) Allopolyploid
	(f) Ethyl methane sulphonate
	(g) Wheat and rye
	(h) X-rays

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21. Give few examples of biofortified crops. What benefits do these offer to the society ?

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22. Scientists have succeeded in recovering healthy plants from a diseased one.

(a) Name the part of the plant used as explant by the scientists.

(b) Describe the procedure the scientists followed to recover the healthy palnts.

(c) Name this technology used for crop improvement

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23. Write about multiple ovulation embryo transfer technology.

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24. What is meant by term breed ? What are the objectives of animal breeding ? Write the names of common breed of cattle and poultry farm.

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25. APPLICATIONS OF PLANT TISSUE CULUTURE

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26. Describe in brief tissue culture technique.

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27. Write a note on micropropagation.

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28. Differentiate between inbreeding and outbreeding in cattle. State one advantage and one disadvantage for each one of them.

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29. (a) Explain how to overcome inbreeding depression in cattle.

(b) List three advantages of inbreeding in cattle.

(c) Name an improved breed of cattle.

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30. (a) Differentiate between inbreeding and outbreeding. (b) Explain inbreeding depression and how it can be overcome. (c) Mention two advantages of inbreeding programme in cattle

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31. (a) What is plant breeding? List the two steps the classical plant breeding involves.

(b) How has the mutation breeding helped in improving crop varieties? Give one example where this technique has helped.

(c) How has the breeding programme helped in improving the public nutritional health? State two examples in support of your answer.

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32. a) Name the tropical sugar cane variety grown in South India. How has it helped in improving the sugar cane qality grown in North India?

b) Identify 'a', 'b' and 'c' in the following table:

No.	Crop	Variety	Insect Pests
1.	Brassica	Pusa Gaurav	(a)
2.	Flat bean	Pusa Sem 2	(b)
		Pusa Sem 3	
3.	(c)	Pusa Sawani	Shoot and fruit borer
		Pusa A-4	

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33. Enlist the steps involved in inbreeding of cattle. Suggest two disadvantages of this practice.

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34. Enumerate any six essentials of good ,effective Dairy Farm Management Practices.

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35. (a) Write the two limitations of traditional breeding technique that led to promotion of micro propagation.

(b) Mention of micro propagation.

(c) Give two examples where it is commercially adopted.

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36. a) What is inbreeding depression?

b) Explain the importance of "selection" during inbreeding in cattle.

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37. (a) Write the desirsble characters a farmer looks for in his sugarcane crop.

(b) How did plant breeding techniques help north Indian farmers to develop cane with desired characters ?

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38. Explain out-breeding out crossing and cross-breeding practices in animal husbandry.

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39. Alien species are a threat to native species. Justify taking example of an animal and a plant alien species.

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40. As a biologists explain the technique to a dairy farmer for increasing the yield of herd size of cattle in a short time.

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41. What is biofortification ? Mention the contribution of Indian Agricultural Research Institute towards it with the help of any two examples.

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Short Answer Question Fill In The Blanks

1. All hybrids of poultry and swine are produced by . . . . . inbred stocks.

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2. Super hybrids are obtained when genetically . . . . . .parents are used in the . . . .

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3. The most extreme form of . . . . . is self pollination or selfing.

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4. The self - pollinated progeny of a . . . . . plant constitute a pure line.

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5. An autotriploid has . . . . . copies of a single genome.

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6. A crop-produce should provide the optimum nutrition and must not contain an . . . . . factor.

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7. A superior female, in the case of cattle, is the cow that produces . . . . . milk per lactation.

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8. The term strain has a similar meaning for the pathogen as line has for the . . . . . .

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9. A . . . . . is produced from a cross between female horse (mare) and male donkey.

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10. Performance of a crop or an animal depends mainly on its genotype and the . . . . . In which it is grown.

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Long Answer Questions

1. Write expanatory notes on the following :

(a) Dairy farm management (b) Poultry farm management.

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2. ANIMAL HUSBANDRY

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

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4. Write explanatory notes on the following : (a) Bee keeping (b) Fisheries.

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5. Define plant breeding ? Describe the various methods of plant breeding.

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6. What is hybridisation ? Describe the procedure of hybridisation.

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7. METHODS OF TISSUE CULTURE (CALLUS CULTURE)

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8. APPLICATIONS OF PLANT TISSUE CULUTURE

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9. Write notes on (i) Single cell protein (ii) Totipotency.

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10. A. Name the ways through which breeders create desired genetic variations in plants.

B. List the chief objectives of animal breeding.

C. What are the three main approaches of animal breeding

D. What is quarantine ?

E. What is emasculation ?

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11. You are a botanist working in the area of plant breeding. Describe the various steps that you will undertake to release a new variety.

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12. Discuss how the property of plant cell totipotency has been utillised for plant propagation and improvement .

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13. SINGLE CELL PROTEIN (SCP)

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14. a) Name the technology that has helped the scientists to propogate on large scale the desired crops in short duration, List the steps carried out to propogate the crops by the said technique.

b) How are somatic hybrids obtained?

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Analytical Question With Answers

1. Which part of the plant is best suited for making virus-free plants and why?

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2. Why is quarantine a must before introduction of a plant species from a different country ?

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3. Which cyanobacterius is commercially used for the production of single cell protein ?

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4. State the economic value of Saccharum officinarum in comparison to S. barberi.

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5. Why is bagging of the emasculated flowers essential during hubridization experiments ?

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6. Mention the stratefy used to increase homozygosity in cattle for desired traits.

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7. Name a man -made cereal , trace , trace how it was developed and where is it used?

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8. Name the blank spaces a,b,c and d from the table given below

Name of crop	Hybrid variety	Resistance to diseases/pests
a	Himgiri	Leaf and stripe rust, hill bunt
Mustard	b	Aphids
Cowpea	Pusa komal	c
Chilli	Pusa Sadabahar	d

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9. What is the difference between Pisciculture and Aquaculture ? What are the benefits of both kinds of cultures ?

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10. What ingradients you suggest to be added in the following specified culture media ?

(a) Preparation of a semisolid medium

(b) Preparation of a solid medium

(c) A culture medium for graving an explant in vitro.

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11. What will you do to get your cow crossed artificially by an exotic bull ?

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12. What is the main reason for low milk production in India ? How can it be improved ?

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13. What is importance of biofortification ? Does this process require genetic engineering ?

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14. Some gaps are left blanks in the following equations. Fill the blanks.

Wild Einkorn	X	'a'= Wild and cultivated Emmer
Wild and Cultivated Emmer	X	'b'= Cultivated bread wheat

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15. Biotechnolgists refer to Agrobacterium tumifaciens as a natural genetic engineer of plants. Give reasons to support the statement.

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16. MOET programme has helped in increasing the herd size of the desired variety of cattle. List the steps involved in conducting programme.

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17. (a) How does a farmer use the dormancy of seeds to his advantage?

(b) What advantages a seed provides to a plant ?

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18. (a) Our body fails to synthesize many essential amino acids. Name four of them.

(b) What are antinutritional factors ? Name such factors that are present (i) Oils and cakes of rape seed and mustard, and (ii) seeds of 'Khesari' (Lathyrus sativus).

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19. How has mutation breeding helped in improving the production of mung bean crop ?

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20. What are somatic hybrids ? How are these produced ? Also mention their common uses.

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Practice Questions Multiple Choice Questions

1. In hybridisation, the haploids combine the advantages of

A. Recombination

B. Segregation

C. Fixation

D. All of them

Answer: A

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2. Which one of the following is not secondary metabolite ?

A. Resins

B. Essential oils

C. Amino acids

D. Tannins

Answer: C

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3. Which one of the following substance is responsible for formation

A. 2,4-D

B. NAA

C. BAP

D. PEG

Answer: A

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4. Who gave the idea that every plant cell is totipotent

A. P.R. White

B. E.C. Cocking

C. F.C. Steward

D. G.Harberlandt

Answer: D

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5. Name the Japanese cytologist who cultured anthers for the first time.

A. Hannig

B. Shima Kura

C. Sumuki

D. Yabuta

Answer: B

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6. In order to obtain disease-free plants through tissue culture techniques, the best method is

A. Embryo rescue

B. Anther culture

C. Protoplast culture

D. Meristem culture

Answer: D

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7. The best way to obtain bacteria and viruses free plants through tissue culture

A. Micropropagation

B. Seed germination after gamma-irradiation

C. Stem or Shoot culture

D. Seed germination under aseptic conditions

Answer: A

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8. Application of embryo culture is in

A. Production of embryoids

B. Overcoming hybridisation barriers

C. Induction of somaclonal variations

D. Clonal propagation

Answer: B

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9. The substance used in the tissue culture medium for induction of shoots in callus is

A. ABA

B. GA_3

C. LAA

D. Kinetic

Answer: D

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10. In tissue culture medium, the embryoids formed from pollen grains is due to

A. Cellular totipotancy

B. Organogenesis

C. Double fertilization

D. Test tube culture

Answer: A

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11. Haploid plantlets can be produced by

A. Pollen culture

B. Cotyledon culture

C. Embryo culture

D. Meristem culture

Answer: A

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12. The technique of obtaining large number of plantlets by culture method is called

A. Organ culture

B. Micropropagation

C. Macropropagation

D. Plantlet culture

Answer: B

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13. The new varieties of plants are produced by

A. Introduction and selection

B. Mutation and selection

C. Selection and hybridization

D. Introduction and Mutation.

Answer: C

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14. Norin gene' of dwarfness in wheat originated through spontaneous mutation originated through spontaneous mutation in

A. India

B. Japan

C. Mexico

D. U.S.S.R.

Answer: B

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15. Pure line breed refer to

A. Homozygosity and independent assortment

B. Homozygosity only

C. Heterozygosity

D. Heterozygosity and linkage

Answer: B

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16. Dharwar American Variety of cotton is the product of

A. Mass selection

B. Mutual breeding

C. Clonal selestion

D. Parasexual hybridization

Answer: D

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17. Selection of homozygous plant is

A. Mass selection

B. Pure line selection

C. Mixed selection

D. None of the above

Answer: B

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18. Triticum aestivum, the common bread wheat is

A. Triploid with 21 chromosomes

B. Tetraploid with 28 chromosomes

C. Hexaploid with 42 chromosomes

D. Diploid with 14 chromosomes

Answer: C

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19. Monosomy and Trisomy can be represnted as

A. 2n+1, 2n+3

B. 2n-1, 2n-2

C. 2n,2n+1

D. 2n-1, 2n+1

Answer: D

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20. Most cultivated plants are

A. Autopolyploids

B. Allopolyploids

C. Aneuploids

D. Haploids

Answer: B

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21. Colchicine brings about

A. Chromosome aberrations

B. Duplication of chromosomes

C. Gene mutations

D. Quick replication

Answer: B

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22. A cybrid is a hybrid carrying

A. cytoplasms of two different plants

B. genomes and cytoplasms of two different plants

C. cytoplasms of two different plants and genome of one plant

D. genomes of two different plants

Answer: C

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23. India wheat yield revolution in the 1960s was possible primarily due to

A. Increased chlorophyll content

B. Mutations resulting in plant height reduction

C. Quantitative trait mutations

D. Hybrid seeds

Answer: C

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24. A self-fertilizing trihybrid plant forms

A. 4 different gametes and 16 different zygotes

B. 8 different gametes and 16 different zygotes

C. 8 different gametes and 32 different zygotes

D. 8 different gametes and 64 different zygotes

Answer: D

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25. The technique of obtaining large number plantlets by tissue culture method is called

A. Organ culture

B. Micropropagation

C. Macropropagation

D. Plantlet culture

Answer: B

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26. Somaclonal variations can be obtained by

A. Application of colchicine

B. Hybridisation

C. Irradiation with gamma rays

D. Tissue culture

Answer: D

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27. Which one of the following is a viral disease of poultry?

A. Coryza

B. New Castle disease

C. Pasteurellosis

D. Salmonellosis

Answer: B

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28. In maize, hybrid vigour is exploited by:

A. Crossing of two hybrid parental lines

B. Harvesting seeds from the productive plants

C. Inducing mutations

D. Bombarding the seeds with DNA

Answer: A

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29. In the hexaploid wheat, the haploid (n) and basic (x) numbers of chromosomes are

A. n=21 and x=21

B. n=21 and x=14

C. n=21 and x=7

D. n=7 and x=21

Answer: C

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30. Which chemical is used for induction of polyploidy ?

A. Cytokinim

B. Nitrous acid

C. Colchicine

D. IAA

Answer: C

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31. In protoplast fusion, the enzymes required are

A. Cellulase, hemicellulase, pectinase

B. Pectinase

C. Ligase, hemicellulase

D. Hemicellulase

Answer: A

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32. Haploids are more suitable for mutation studies than the diploids. This is because

A. Haploids are more abundant in nature than diploids

B. All mutations, whether dominant or recessive are expressed in haploids

C. Haploids are reproductively more stable than diploids

D. Mutagens penetrate in haploids more effectively than in diploids

Answer: B

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33. By which of the following methods, new and better varieties of plants can be formed?

A. Selection

B. Grafting

C. Hybridization

D. Hybridization followed by selection

Answer: D

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34. Which one of the following is the America poultry breed?

A. Australorp

B. Rhode Island Red

C. Minorca

D. Aseel

Answer: B

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35. Lactic acid bateria convert milk into curd an improves its nutritional quality by enhancing vitamin :

A. A

B. B

C. C

D. D

Answer: B

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36. Spirulina is rich source of

A. Protein

B. Vitamins

C. Minerals

D. All of these

Answer: A

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37. Which one of the following has maximum genetic diversity in India

A. Mango

B. Wheat

C. Tea

D. Teak

Answer: A

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38. Somaclonal varations appear in plants:

A. Growing in polluted soil or water

B. Exposed to gamma rays

C. Raised in tissue culture

D. Transformed by recombinant DNA technology

Answer: C

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39. 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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40. 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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41. Given below are a few statements regarding somatic hybridisation. Choose the correct statements.

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

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

(iii) Treatment of cell with cellulase and pectinase mandatory.

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

A. (i) and (iii)

B. (i) and (ii)

C. (iii) and (iv)

D. (ii) and (iii)

Answer: D

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42. 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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43. 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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44. Lysine and tryptophan are

A. proteins

B. non-essential amino acids

C. essential amino acids

D. aromatic and no acids

Answer: C

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45. 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: B

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46. Protoplast is

A. another name for protoplasm

B. an animal cells

C. a plant cell without cell wall

D. a plant cell

Answer: C

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47. To isolate protoplast, one needs

A. pectinase

B. cellulase

C. both pectinase and cellulase

D. chitinase

Answer: C

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

A. Rohu

B. Hilsa

C. Catla

D. Common carp

Answer: B

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49. 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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50. More than 70 per cent of livestock population is in

A. Denmark

B. India

C. China

D. India and China

Answer: D

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51. The agriculture sector of India employs about

A. $60\ \%$ of the population

B. $70\ \%$ of the population

C. $30\ \%$ of the population

D. $62\ \%$ of the population

Answer: D

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52. 33 percent of India's (Gross Domestics Product) comes from

A. Industry

B. Agriculture

C. Export

D. Small scale cottage industry

Answer: B

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53. 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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54. Breeding of crops with high levels of minerals , vitamins and proteins is called

A. micropropagation

B. somatic hybridisation

C. biofortification

D. biomagnification

Answer: C

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55. The genetically -modified (GM) brinjal in India has been developed for

A. draught resistance

B. insect resistance

C. enhancing shelf life

D. enhancing mineral content

Answer: B

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56. Some of the characteristics of Bt-cotton are :

A. high yield and resistance to Boll worms

B. long fibres and resistance to aphids

C. medium yeild, long fibres and resistance to beetle pests

D. high yield and production of toxic protein crystals which kill dipteran pests

Answer: A

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57. An improved variety of transgenic basmati rice

A. give high yeild but no characteristic aroma

B. does not require chemical fertilizer and growth hormones

C. gives high yield and rich in vit. A

D. is resistant to all insect pests and diseases of paddy

Answer: C

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58. One of the commonly used plant growth hormone in tea plantations is

A. Ethylene

B. abscisic acid

C. Zeatin

D. indole-3-acetic acid and IBA

Answer: D

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59. Root development is promoted by

A. Abscisic acid

B. auxin

C. Ethylene

D. gibberallins

Answer: B

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60. During lactic acid fermentation,.....

A. O_2 is used CO_2 is not liberated

B. O_2 is not used CO_2 is liberated

C. O_2 is used, CO_2 is liberated

D. O_2 is not used, nor CO_2 is liberated

Answer: D

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61. Milk sugar is

A. Glucose

B. Lactose

C. Fructose

D. Sucrose

Answer: B

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62. To meet the demands of the society, in vitro production of a large number of plantlets in a short duration is practised in floriculture and horticulture industry today is called .....

A. somatic hybridisation

B. micropropagation

C. hybridoma technology

D. somaclonal variation

Answer: B

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63. Micropropagation is a technique

A. for production of true to type plants

B. for production of haploid plants

C. for production of somatic hybrids

D. for production of somaclonal plants

Answer: A

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64. Maize hybrids have been developed for higher amount of.

A. Lysine

B. Leucine

C. Methionine

D. Cysteine

Answer: A

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65. The most commonly maintained species of bee by bee keepers is

A. Apis mellifera

B. Apis dorsata

C. Apis indica

D. Apis florea

Answer: A

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66. Triticale is the hybrid between wheat and

A. Wheat and rye

B. Wheat and maize

C. Wheat and barley

D. Rye and maize

Answer: A

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67. Lactobacillus mediated conversion of milk to curd results because of:

A. coagulation and partial digestion of milk fats

B. coagulation and partial digestion of milk proteins

C. coagulation of milk proteins and complete digestion of milk fats

D. coagulation of milk fat and complete digestion of milk proteins

Answer: B

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68. Species of Saccharum originally grown in India was

A. S. officinarum

B. S. barberi

C. S. oulardii

D. S. munja

Answer: B

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69. Single cell protein refers to

A. a specific protein extracted from pure culture of single type of cells

B. sources of mixed proteins extracted from pure or mixed culture of organisms or cells

C. proteins extracted from a single cell

D. a specific protein extracted from a single cell

Answer: B

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70. Probiotics are

A. cancer inducing microbes

B. safe antiniotics

C. food allergens

D. live microbial food supplements

Answer: D

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71. "Jaya" and "Ratna" developed for green revolution in India are the varieties of :-

A. maize

B. rice

C. wheat

D. bajra

Answer: B

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72. Himgiri developed by hybridisation and seldction for disease resistance against rust pathogens is a variey of

A. chilli

B. maize

C. sugarcane

D. wheat

Answer: D

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73. Which one of the following is not a biofertilizer?

A. Agrobacterium

B. Rhizobium

C. Nostoc

D. Mycorrhiza

Answer: A

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74. Name the species of honey bee, which is used for commerical production of honey.

A. Apis dorsata

B. Apis indica

C. Apis florea

D. Apis mellifera

Answer: D

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75. Which one of the following is a breed of cattle ?

A. Aryshire

B. Ghagus

C. Kadakanath

D. Scampi

Answer: A

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76. In plant breeding programme, the entire collection (of plants/seed) having all the diverse alleles for all genes in a given crop is called

A. cross-hybridisation among the selected parents.

B. evaluation and selection of parents.

C. germplasm collection.

D. selection of superior recombinants.

Answer: C

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77. Golden rice is a genetically modified crop plant where the incorporated gene is meant for biosynthesis of:

A. Vitamin A

B. Vitamin B

C. Vitamin C

D. Omega 3

Answer: A

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78. Outbreeding is an important strategy of animal husbandry because it

A. Exposes harmful recessive genes that are eliminated by selection

B. Helps in accumulation of superior genes

C. Is useful in producing purelines of animals

D. In use in overcoming inbreeding depression

Answer: D

Watch Video Solution

79. A system of rotating crops with legume or grass pasture to improve soil structrue and fertility is called

A. Contour farming

B. Strip farming

C. Shifting agriculture

D. Ley farming

Answer: D

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80. Which part of the tobacco plant is infected by Meloidogyne incognita?

A. Leaf

B. Stem

C. Root

D. Flower

Answer: C

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81. Interspecific hybridisation is the mating of

A. animals within same breed without having common ancestors

B. Two different related species

C. superior males and females of different breeds

D. more closely related individuals within same breed for 4-6 generations

Answer: B

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82. Homozygous purelines in cattle can be obtained by

A. mating of unrelated individuals of same breed

B. mating of individuals of different breed

C. mating of individuals of different species

D. mating of related individuals of same breed

Answer: D

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Practice Questions Assertion Reason Type Questions

1. Assertion.Oue present day crop plants are entirely different from their ancestors.

Reason. Almost all our present day crops are result of selections carried out by the prehistoric human beings.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: C

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2. Assertion. Hybrid seeds must be produced every year to obtain maximum advantage of heterosis.

Reason. Heterosis is lost by inbreeding

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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3. Assertion. Seeds and plant samples of only genetically superior and cultivated species are introduced from one country to another. Reason. The cultivated species find a direct use in the crop improvement programmes of the importing country.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: D

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4. Assertion. A pure-line is the progeny of a large number of heterozygous self pollinated plants.

Reason. In this method, a large number of plants with desired characters are selected from a genetically mixed population.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: D

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5. Assertion. Feeding of rarer plants into agriculture and horiticulture trade is of great advantage to genetic conservation. Reason. Rare plants and animals have enhanced in their only because of their trade.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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6. Assertion. Inbreeding increases homozygosity thus helps in developing a pureline in any organism.

Reason. Continued inbreeding leads to heterosis.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: C

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7. Assertion. One of the major crops that originated in the new world is wheat.

Reason. Wheat is cultivated in large scale in Central Asia.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: D

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8. Assertion. Genetic diversity of our crop plants must be conserved.

Reason. Genetic diversity is being or is likely to be used in the improvement of domesticate plants.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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9. Assertion. Lantana camara is an exotic plant introduced in India.

Reason. Introduced plants are always harmful in a new area.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: C

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10. Assertion. A gene bank should not be regarded as a plant museum.

Reason. The germplasms stored in the gene bank are actively are actively utilised by breeders to develop novel varieties.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

11. Assertion. Protoplast culture is an impotant technique of genetic engineering.

Reason. This technique results in the production of genetically modified crops.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: D

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12. Assertion (A). Virus free plants can be produced from vrius infected plant by means of Meristem culture.

Reason Â®. Virus fails to grow during growth of host tissue in the artifical medium

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: C

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13. Assertion. Protoplast fusion is one of the major advantages of tissue culture.

Reason. The naked protoplasts of two different plants fuse to from a hybrid.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: A

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14. Assertion. Somaclonal variations occur in tissue culture processes.

Reason. Variations cannot occur in nature.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is false.

D. If both Assertion and Reason are false.

Answer: C

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Notable Question

1. What is green revolution ?

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2. What is the purpose of producing haploid plants ?

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3. What is gene plantation ?

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