



BIOLOGY

BOOKS - AAKASH SERIES

STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION

Exercise I

1. The agricultural practice of breeding and raising of livestock is called

A. Animal husbandry

B. Bioinformatics

C. Phamacology

D. Biotechnology

Answer: A



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2. 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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3. Roughage includes

A. cereals

B. millets

C. abundant fibres

D. broken gram

Answer: C



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4. Livestock refers to

A. Domestic animals

B. Poultry animals

C. Wild animals

D. Both (2) and (3)

Answer: A



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5. 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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6. The management of animals for milk and its products for human consumption is called

A. Poultry farming

B. Dairying

C. Pisciculture

D. Aquaculture

Answer: B



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7. The young chicken raised specifically for meat are called

A. broilers

B. cockerels

C. pullets

D. hen

Answer: A



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8. Exotic breed of poultry is

A. Assel

B. Busra

C. Brahma

D. White leghorn

Answer: D



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

A. Very high

B. High

C. Moderate

D. None

Answer: D



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10. Which of the following is the "bird flu virus"

?

A. H5N1

B. Haemophilus influenza

C. HIV

D. Rhino virus

Answer: A



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11. Read the following statements select the correct option.

Statement 1 : Ranikhet disease is a disease of poultry.

Statement 2: It is caused by a virus.

A. Both statements 1 and 2 are correct and statement 2 is the correct explanation of statement 1.

B. Both statements 1 and 2 are correct but statement 2 is not the correct explanation of statement 1.

C. Statement 1 is correct statement 2 is incorrect

D. Both statements 1 and 2 are incorrect.

Answer: B



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12. The mule is a

- A. sterile male
- B. fertile male
- C. sterile female
- D. fertile female

Answer: A



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13. Hinny is a hybrid of male

A. horse and female donkey

B. donkey and female horse

C. goat and female lamb

D. sheep and female goat

Answer: A



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14. Which of the following is sterile hybrid

A. Donkey

B. Yak

C. Mule

D. Sheep

Answer: C



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15. Mating of more closely related individuals within the same breed for 4-6 generation is

- A. Out breeding
- B. Out crossing
- C. Cross breeding
- D. Inbreeding

Answer: D



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16. In MOET (Multiple Ovulation Embryo Technology), the fertilized eggs from cow collected in this stages.

A. 6 to 7 cells

B. 8 to 32 cells

C. 2 to 4 cells

D. 36 to 40 cells

Answer: B



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17. There are animals, which are useful to us in more than one way. Select an appropriate code to match the animals to utilize.

Column - I

Column-II

- A) Milk, leather and butter
- B) Milk and flesh
- C) Transport and waterfare
- D) Fur, milk and meat

- 1) Goat
- 2) Horse
- 3) Sheep
- 4) Buffalo

	A	B	C	D		A	B	C	D
1)	4	1	2	3	2)	1	3	2	4
3)	1	2	4	3	4)	3	2	1	4

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18. Merino sheep has been imported for

- A. increasing wool output through Marino farms
- B. increasing mutton availability
- C. improving indigenous breeds
- D. developing hybrid between sheep and goat

Answer: C



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19. Which amongst the following is used in raising super - milk cows ?

A. Artificial insemination with pedigree.

B. Embryo transplantation

C. Super ovulation of high yielding cow

D. All of the above

Answer: D



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20. High milk yielding varieties of cows are obtained by

- A. super ovulation
- B. artificial insemination
- C. use of surrogate mother
- D. All of the above

Answer: D



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21. Practice of mating of animals within the same breed, but having no common ancestors on either side of their pedigree upto 4-6 generation is

- A. Out crossing
- B. Cross breeding
- C. In breeding
- D. Interspecific hybridisation

Answer: A



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22. The new breed of sheep developed in Punjab by crossing Bikaneri Ewes and Marino Rams is

- A. Dorset
- B. Scottish black face
- C. Hisardale
- D. Murrah

Answer: C





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23. 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: A



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24. 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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25. 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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26. 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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27. Match the terms given in Column-I with their descriptions given in Column-II and select the correct option from the codes given below.

Column-I	Column-II
A) Out-crossing	(i) Mating of closely related individuals within the same breed
B) Interspecific hybridisation	(ii) Mating of animals of same breed but having no common ancestors on either side of their pedigree for 4-6 generations
C) Cross-breeding	(iii) Mating of animals of two different species
D) Inbreeding	(iv) Mating of animals belonging to different breeds

A. A-(ii), B-(i), C-(iv), D-(iii)

B. A-(iii), B-(ii), C-(iv), D-(i)

C. A-(iv), B-(ii), C-(iii), D-(i)

D. A-(ii), B-(iii), C-(iv), D-(i)

Answer: A



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28. Given below are three statements (A-C) each with one or two blanks. Select the option which correctly fills up the blanks in any two

statements

A. Diseases or infections which are transmitted through sexual intercourse are collectively called i diseases

B. Genital herpes is ii disease

C. Sterilisation in males is iii while in females is iv

A. (A)-(i) zygote, (ii) pureline:(B)-(i)

oestrogen, (ii) poly

B. (A)-(i) embryo, (ii) herd,(D)-(i) zygote, (ii)

C. 1-(i) 6-8, (D)-(i) eggs, (ii) 4-8

D. (B)-(i) FSH, (ii) super, (C)-(i) 6-8

Answer: D



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29. Study the following statements regarding inbreeding and select the incorrect ones.

(i) The inbreeding strategies allow the desirable qualities of two different breeds to be combined.

(ii) It increases homozygosity.

(iii) It also helps in elimination of less desirable genes.

(iv) Continued inbreeding increases fertility and productivity.

A. (i) and (ii)

B. (ii) and (iii)

C. (iii) and (iv)

D. (i) and (iv)

Answer: D



30. What strategy would you suggest if a person wants to evolve a pure line in an animal ?

- A. Cross-breeding
- B. Inbreeding
- C. Out-breeding
- D. Artificial insemination

Answer: B



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31. The term "inbreeding depression" is related to

- A. increased fertility and productivity
- B. increased milk production
- C. reduced fertility and productivity
- D. reduced milk production.

Answer: C



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32. Which of the following statements is not correct regarding inbreeding ?

- A. It is the breeding between animals of the same breed
- B. It decreases homozygosity.
- C. It exposes harmful recessive genes.
- D. It helps in accumulation of superior gense.

Answer: B



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33. Fill up the blanks by selecting the correct option.

In cross-breeding, _____ of one breed are mated with _____ of another breed.

A. superior males, normal females

B. normal males, superior females

C. normal males, normal females

D. superior males, superior females

Answer: D



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LIST - 1

- A) Pollutant but not contaminant
- B) Bhopaltragedy
- C) Receptor to smoke of automobiles
- D) Sink to dry leaves and garbage

LIST - 2

- I) Methyl isocyanate ($\text{CH}_3 - \text{N CO}$)
- II) CO_2
- III) Human eyes
- IV) Micro organisms
- V) Mercury

34. The correct match is

The correct match is

A. 1-FSH, 2-Superovulation due to induced follicular maturation, 3 -Transfer to surrogate mother

B. 1-LH, 2-Superovulation due to induced follicular maturation, 3 -Transfer to surrogate mother

C. 1-progesterone, 2-Superovulation due to induced follicular maturation, 3 -Transfer to surrogate mother

D. 1-FSH, 2-Transfer to surrogate mother, 3-

Superovulation due to induced follicular

maturation,

Answer: A



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35. Lean meat' is considered to be high quality

because it has

A. lesser but easily digestible protein

B. lesser lipid content

C. more fat that makes the meat softer

D. longer table life to lesser chances of
infection.

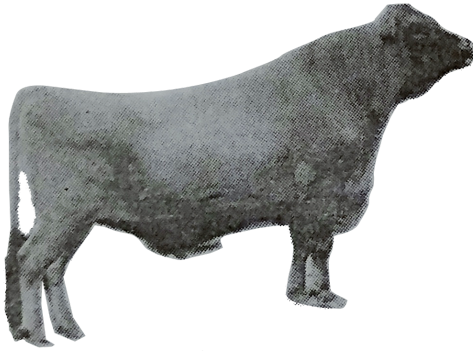
Answer: B



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36. A is an improved breed of cattle and B is an improved breed of chicken. Which of the

following options correctly identifies A and B ?



A. A-jersey, B-Leghon

B. A-Surti, B-Sangamneri

C. A-Marwai, B-Sirohi

D. A-Beetal, B-Jamunapri

Answer: A



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37. Which of the following animals has the capacity to reproduce both with and without fertilization of eggs ?

A. Housefly

B. Honey bee

C. Silkmoth

D. Earthworm

Answer: B



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38. Which among the following is real product of honey bee?

A. Bee wax

B. honey

C. Propolis

D. Pollen

Answer: A



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39. Honeybees are used for

- A. Sericulture
- B. Tissue culture
- C. Apiculture
- D. Pisciculture

Answer: C



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40. Honey bee is of greatest use to man due to which reason

A. 1)We get honey from them

B. 2)Helps is cross pollination

C. 3)Because medicinal value

D. 4)Entertains

Answer: B



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41. 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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42. Which of the following points are important for successful bee-keeping?

(i) Knowledge of the nature and habits of bees.

(ii) Selection of suitable location for keeping the beehives.

(iii) Management of beehives different seasons.

(iv) Cross hybridisation among the selected parents.

A. (i), (iii) and (iv)

B. (ii) and (iv)

C. (i), (ii) and (iii)

D. (i) and (iii)

Answer: C



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43. The Hilsa fish is found in

A. land

B. pond

C. freshwater

D. marine water

Answer: D



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44. The aquaculture involves the production of useful

A. aquatic plants

B. shrimps and prawns

C. Fishes and oysters

D. All of these

Answer: D



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45. Which of the following is a freshwater edible fish ?

A. Eel

B. Rohu

C. Hilsa

D. Sadine

Answer: B



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46. Which one among the following is a marine fish ?

A. Rohu

B. Hilsa

C. Catla

D. Common Carp

Answer: B



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

A. Rohu

B. Hilsa

C. Catla

D. Common Carp

Answer: B



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48. Three carp fishes, Catla, Labeo and Cirrhina, can be grown together in the same pond more economically as they have :

A. positive interactions

B. hybridisation

C. symbiosis

D. no competition for food

Answer: D



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49. Somatic hybridisation is achieved through

?

A. grafting

B. protoplast fusion

C. conjugation

D. recombinant DNA technology

Answer: B



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50. Which one is required for protoplast fusion ?

(A) Treatment with cellulase and pectinase

(B) Electrofusion or PEG treatment

(C) Both A and B

(D) Recombinant DNA technology

A. treatment with cellulose and pectinase

B. electrofusion of PEG treatment

C. both (1) and (2)

D. recombinant DNA technology

Answer: C



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51. Breeding for disease resistance requires

A. a good source of resistance

B. planned hybridisation

C. disease test

D. all of the above

Answer: D



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52. Modification and adjustment of an organism to local environment is called

A. introduction

B. selection

C. acclimatization

D. quarantine

Answer: C



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53. Heterosis is:

- A. appearance of spontaneous mutations
- B. induction of mutations
- C. mixture of two or more traits
- D. superiority of hybrids over their parents

Answer: D



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54. Crop improvement was considered as a branch of science only after the

A. Proposal of laws of inheritance by

Mendel

B. Discovery of mutation by Hugo de Vries

C. Development of Mutation breeding by

Muller & Stadler

D. Rediscovery of Mendel law of heredity in

1900.

Answer: D



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55. The seeds of plants (growing wild) placed in our Garden it can be referred to as

- A. Domestication
- B. Acclimatization
- C. Plant introduction
- D. Hybridization

Answer: A



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56. At present the application of techniques related to which branch is found time saving in crop improvement

- A. Cytology
- B. Taxonomy
- C. Plant physiology
- D. Molecular Genetics

Answer: D



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57. Which of the following characteristics of crop plant cannot be considered as desirable in the crop improvement

- A. High yielding
- B. Disease resistance
- C. Late maturity
- D. Wide adaptability

Answer: C



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58. First & foremost aim of plant breeding is

- A. 1) Transfer of disease resistance
- B. 2) Production of early maturing varieties
- C. 3) Breeding high yielding, varieties
- D. 4) Improvement of the quality

Answer: C



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59. The rice variety introduced of India from Philippines is

A. IR8

B. Sonora

C. TMV-3

D. Sweedish

Answer: A



60. The basis for artificial selection of desirable plants is

- A. Genetic variability in a population
- B. Uniformity of population
- C. More homozygosity in a population
- D. High fertility in a population

Answer: A



61. Most of the existing crops are products of

A. Mass selection

B. Introduction

C. Hybridization

D. Pure line selection

Answer: A



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62. Select a method of plant breeding useful in incorporating the new characters into the plants

- A. Introduction
- B. Pure line selection
- C. Hybridization
- D. Clonal selection

Answer: C



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63. Large number of desirable characters can be incorporated into a single variety by

A. Mutation breeding

B. Clonal selection

C. Hybridization

D. Pureline selection

Answer: C



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64. Undesirable cross pollination can be prevented during hybridization by

A. Bagging

B. Emasculation

C. Using male sterile varieties as female parents

D. Anther culture & Colchicine treatment

Answer: A



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65. Labels carrying the details of the parents, date of crossing etc., are tagged to the

- A. Male flowers of male parent
- B. Female flowers of male parents
- C. Emusculated flowers after crossing
- D. Plants of pure line

Answer: C



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66. During hybridization bagging is done

A. Before emasculation and after emasculation

B. Before emasculation and after artificial cross pollination

C. After emasculation and before artificial cross pollination

D. After emasculation, until and after artificial cross pollination

Answer: D



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67. Inbreeding depression is due to

A. Mutation

B. Vegetative propagation

C. Cross breeding

D. Self pollination

Answer: D



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68. The spontaneous mutation were first observed in the plant, commonly known as

- A. Prime rose
- B. Evening prime rose
- C. Table rose
- D. China rose

Answer: B



69. Most efficient and ultimate method of crop improvement that creates greatest genetic variability is

- A. Mass selection
- B. Intergeneric hybridization
- C. Mutation breeding
- D. Polyploidy breeding

Answer: C



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70. Chemical mutagens mostly induce

- A. Chromosomal mutations
- B. Change in the number of chromosomes
- C. Gene mutations
- D. Formation of polyploids

Answer: C



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71. Greater genetic variability can be created in the plants through.

- A. Mass selection and Clonal selection
- B. Pure line selection and Clonal selection
- C. Pure line selection and Mass selection
- D. Hybridization and Mutation breeding

Answer: D



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72. Most common method of inducing polyploidy

A. Cold treatment

B. Using X - rays

C. Colchicine treatment

D. Acenaphthene treatment

Answer: C



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73. Which of the following functions like mitotic poison?

A. Colchicine

B. Monosodium Glutamate

C. Kinetin

D. 2,4 - D

Answer: A



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74. The ploidy of the aleurone cell when a "4n" female plant is crossed with "2n" male plant

A. 5n

B. 4n

C. 3n

D. 2n

Answer: A



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75. The number of chromosomes present in the cells of the bread wheat, *Triticum aestivum* suggests that it is

A. Seven

B. Fourteen

C. Two

D. One

Answer: D



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76. Study the following statements regarding inbreeding and select the incorrect ones.

(i) The inbreeding strategies allow the desirable qualities of two different breeds to be combined.

(ii) It increases homozygosity.

(iii) It also helps in elimination of less desirable genes.

(iv) Continued inbreeding increases fertility and productivity.

A. i and ii

B. ii and iii

C. iii and iv

D. i and iv

Answer: D



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77. Crossing of individuals of two different to produce a hybrid is called

A. Interspecific hybridisation

B. intervarietal hybridisation

C. intergeneric hybridisation

D. intravarietal hybridisation

Answer: A



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78. What strategy would you suggest if a person wants to evolve a pureline in an plant?

A. Cross-breeding

B. Inbreeding

C. Out-breeding

D. Artificial insemination

Answer: B



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79. Continued inbreeding, especially close inbreeding generally results in

A. inbreeding depression

B. inbreeding stimulation

C. inbreeding hybridization

D. inbreeding mutation

Answer: A



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80. Which of the following is incorrectly matched ?

Disease Causative organism

A. Blank rot of crucifers Bacteria

B. Brown rust of wheat Fungi

C. Late blight of potato Virus

D. Red rot sugarcane Fungi

Answer: C



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81. Which of the following diseases is caused by bacteria ?

- A. Tobacco mosaic
- B. Black rot of crucifers
- C. Red rot of sugarcane
- D. Light blight of potato

Answer: B



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82. Which one of the following crop varieties correctly matches with its resistance to a disease ?

A. Pusa Komal Bacterial blight

B. Pusa Sadabahar White rust

C. Pusa Swarnim Tobacco mosaic virus

D. Pusa Shubbra Chilli mosaic virus

Answer: A



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83. Select the option showing the correct sequential steps to produce a new genetic variety of a crop

A. Selection of parents → Hybridisation
of selected parents → Germplasm
collection → Selection of superior
recombinants → Testing and release
of new varietise.

B. Germplasm collection → Selection of
parents → Hybridisation of selected
parents → Selection of superior
recombinants → Testing and release
of new varietise.

C. Selection of superior recombinants →

Germplasm collection → Hybridisation
of selected parents → Selection of
parents → Testing and release of new
varietise.

D. Germplasm collection → Selection of
parents → Hybridisation of selected
parents → Testing and release of new
varietise → Selection of superior
recombinants.

Answer: B



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84. Jaya and Ratna are the semi-dwarf varieties of
of

A. wheat

B. rice

C. cowpea

D. mustard

Answer: B



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85. Which of the following are the species that are crossed to give sugarcane varieties with high sugar, high yeild, thick stems and ability to grow in the sugarcane belt of North India ?

A. *Saccharum robustum* and *Saccharum officinarum*

B. Saccharum barberi and Saccharum officinarum

C. Saccharum sinense and Saccharum officinarum

D. Saccharum barberi and Saccharum robustum

Answer: B



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86. Late blight of potato is caused by

A. bacteria

B. viruses

C. nematodes

D. fungi

Answer: D



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87. A wheat variety, Atlas 66, which has been used as a donor for improving cultivated wheat is rich in

- A. iron
- B. carbohydrates
- C. proteins
- D. vitamins

Answer: C



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88. Germplasm collection is the collection of

A. germ cells

B. semens

C. plants/seeds with all the diverse alleles

for all gense

D. egg cell

Answer: C



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89. Which of the following statement is not correct regarding plant breeding?

A. It reduces the dependence on fungicides and bactericides

B. It provides somaclonal variation

C. It is independent of germplasm collection

D. It involves self-pollination of plants

Answer: B



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90. Which of the following disease is caused by virus ?

- A. Tobacco mosaic
- B. Late blight of potato
- C. Trunip mosaic
- D. Both (1) and (3)

Answer: D



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91. Match Column-I (crop) with Column-II (corresponding disease resistant variety) and select the correct option from the codes given below.

Column-I	Column-II
A) Cow pea	i) Himagiri
B) Wheat	ii) Pusa Komal
C) Chilli	iii) Pusa Sadabahar
D) Brassica	iv) Pusa swarnim

A. A-(iv), B-(ii), C-(iii), D-(i)

B. A-(ii), B-(i), C-(iii), D-(iv)

C. A-(ii), B-(iv), C-(i), D-(iii)

D. A-(i), B-(iii), C-(iv), D-(ii)

Answer: B



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92. Hairy leaves of many plants are associated with

A. resistance to insect pests

B. resistance to viruses

C. resistance to fungi

D. resistance to bacteria

Answer: A



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93. Resistance to jassides in cotton plants and to cereal leaf beetle in wheat plants is due to

- A. biochemical characters
- B. physiological characters
- C. morphological characters

D. none of these

Answer: C



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94. Maize generates resistance against stem borers by having

A. low aspartic acid, high nitrogen and sugar content

B. low aspartic acid and sugar but high nitrogen content

C. high aspartic acid, and nitrogen but low sugar content

D. high aspartic acid, low nitrogen and sugar content

Answer: D



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95. Which of the following statements is correct regarding nectarless cotton varieties?

- A. They do not attract stem sawfly.
- B. They are produced by mutation breeding
- C. They do not attract bollworms.
- D. They attract cereal leaf beetle.

Answer: C



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96. Match Column-I (crop) with Column-II (corresponding insect pests resistant variety) and select the correct option from the codes given below.

Column-I

A. Flat bean

B. Okra (Bhindi)

C. Brassica

Column-II

(i) Pusa Gaurav

(ii) Pusa Sem-2

(iii) Pusa Sawani

A. A-(ii), B-(i), C-(iii)

B. A-(ii), B-(iii), C-(i)

C. A-(i), B-(ii), C-(i)

D. A-(i), B-(iii), C-(ii)

Answer: B



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97. Which of the following is an example of mutation breeding?

A. Pusa Swarnim, resistant to white rust

B. Mung bean, resistant to yellow mosaic virus

C. Pusa Sadabahar, resistant to chilli

mosaic virus

D. Pusa Gaurav, resistant to aphids

Answer: B



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98. Yellow mosaic virus resistant variety "

Parbhani Kranti" belongs to

A. bhindi

B. barley

C. chilli

D. cauliflower

Answer: A



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99. Biofortifications refers to the development of crop plants which are

A. resistant to disease

B. resistant to insect pests

C. having improved nutritional quality

D. having improved iron content.

Answer: C



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100. Major percentage of India's Gross

Domestic Product is constituted by

A. industry

B. agriculture

C. export

D. small scale cottage industry.

Answer: B



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101. Which of the following is incorrectly paired?

A. Wheat Himgiri

B. Milch breed Sahiwal

C. SCP Spirulina

D. Pusa Komal Brassica

Answer: D



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102. Which of the following is non conventional agricultural product ?

A. Pulses

B. Cereals

C. SCP

D. Fruits

Answer: C



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103. The approximate weight of grains used to produce 1kg of meat by animal farming is

A. 3-10 kg

B. 30-100 kg

C. 0.3-1.0 kg

D. 27-297 kg

Answer: A



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104. Percentage of human population suffering from hunger and malnutrition is

A. $> 10\%$

B. $> 15\%$

C. $> 25\%$

D. $> 75\%$

Answer: C



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105. Large scale production of the following is the source is good protein

A. Earthworms

B. Potato

C. Starfish

D. Microbes

Answer: D



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106. The dry mass of living organism is

A. Biomass

B. Biovolume

C. Standard mass

D. Biofertilized mass

Answer: A



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107. Filamentous blue green alga used as SCP among the following

A. Brevibacterium

B. Methylophilus

C. Spirulina

D. Yeast

Answer: C



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108. Which of the following is used to produce SCP on commercial scale

A. Chlorella

B. Spirulina

C. Methylophilus methylocrophus

D. All of these

Answer: D



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109. Chloralla and spirulina which are grown to harvest SCP are

A. Unicellular green alga and filamentous blue green alga respectively

B. Filamentous blue green alga and unicellular green alga respectively

C. Baker's Yeast and Torula yeast respectively

D. Filamentous fungus and unicellular fungus respectively

Answer: A



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110. Which of the following statements is/are not correct for single cell protein (SCP)?

(i) The biomass is obtained from unicellular microorganisms only.

(ii) It provides a protein rich supplement.

(iii) They can be grown easily on materials like waste water from potato processing plants, straw, manure, sewage, etc.

(iv) It helps to minimise environmental pollution.

(v) SCP has to be processed before use.

A. (i), (iii) and (iv)

B. (iii) only

C. (iv) only

D. (i) and (iii)

Answer: D



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111. Single cell protein can be obtained from

A. bacteria

B. algae

C. fungi

D. all of these

Answer: D



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112. Aseptic seedlings can be developed from seeds which are germinated on

A. Basal medium

B. Medium with auxins only

C. Medium with cytokinins only

D. Medium with fruits juices

Answer: A



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113. Temperature required during autoclaving is

A. $80^{\circ}C$

B. $100^{\circ} C$

C. $140^{\circ} C$

D. $121^{\circ} C$

Answer: D



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114. Sodium hypochlorite is used in

A. Sterilizing the medium

B. Sterilizing the explant

C. Inoculation

D. Morphogenesis

Answer: B



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115. Rhizogenesis is due to

A. More auxin than cytokinin

B. Gibberellin

C. More cytokinin than auxin

D. Abscisic acid

Answer: A



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116. Caulogenesis is due to

A. More auxin than cytokinin

B. Gibberellin

C. More cytokinin than auxin

D. Abscisic acid

Answer: C



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117. The technique of obtaining large number of plants through tissue culture is

- A. Micropropagation
- B. Hybridoma technology
- C. Cryopreservation
- D. Totipotency

Answer: A



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118. Totipotent cells are basically

- A. Meristematic cells
- B. Cork cells
- C. Xylem vessels
- D. Fbres

Answer: A



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119. Female plants in *Carica* are produced in great number

A. By growing seeds on culture medium containing gibberellins

B. By growing seeds on culture medium containing auxins

C. By excising the tissue from plant and growing on the nutrient medium

D. By excising the tissue either from male or female plant and growing it in the nutrient medium containing auxins

Answer: C



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120. Nutrient medium is solidified by adding

A. NAA

B. Sodium hypochlorite

C. Agar

D. Explant

Answer: C



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121. Inoculation of explant is carried out to

A. Autoclave

B. Laminar are flow chamber

C. Incubation chamber

D. Septic condition

Answer: B



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122. Nutrient medium is sterilized with the help of

A. Laminar air flow chamber

B. Incubation chamber

C. Pasteurisation

D. Autoclave

Answer: D



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123. Any part of the plant which is introduced to culture medium to grow into full fledged plant or organs in vitro is called

A. Propagule

B. Clone

C. Plantlet

D. Explant

Answer: D



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124. A sythetic seed consist of

A. Somatic embryo without protecting capsule

B. Only sodium alginate capsule

C. Somatic embryo with capsule made with mercuric choride

D. Somatic embryo, nutrient medium and capsule made with sodium alginate

Answer: D



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125. Virus free plants can be generated through -

- A. Embryo culture
- B. Anther culture
- C. Shoot-tip culture
- D. Organ culture

Answer: C



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126. Which of the following needs not be used while preparing a basal nutrient medium ?

A. Sugar

B. Vitamins

C. Growth regulators

D. Amino acids

Answer: C



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127. Regeneration of complete plantlets from callus does not require the presence of this component in the culture medium

A. NAA

B. Kinetin

C. Sodium hypochlorite

D. IAA

Answer: C



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128. Culture vessel should be closed with non-absorbent cotton plug, for the first time

A. Immediately after autoclaving the medium

B. Soon after inoculation

C. Before autoclaving the culture vessels

D. During incubation

Answer: C



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129. In a virus Banana crop, the healthy progeny can be obtained through

A. Suckers

B. Rhizomes

C. Embryo culture

D. Shoot-tip culture

Answer: D



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130. Which one of the following is a type of tissue?

- A. Macro and micronutrients
- B. Amino acids and vitamins
- C. Growth regulators
- D. Carbohydrates

Answer: D



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131. Plantlets developed by anther culture can be prevented from desiccation by

A. Keeping them in autoclave

B. Growing them in small pots with compost

C. Growing them in medium rich in growth hormones

D. Growing them with polythene bags

Answer: D



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132. Mismatch of the following is

A. Shoot tip culture-Production of virus free plants

B. Somaclonal variation-Variations due to gene recombinations

C. Synthetic seeds-Alginated embryoids

D. None

Answer: B



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133. It leaf is used as explant, surface sterilization of the explant is done with

- A. Liquid detergent
- B. Sodium hypochlorite
- C. Mercuric chloride
- D. Distilled water

Answer: B



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134. The following provides aeration for tissue growth "invitro"

A. Macro and micronutrients

B. Amino acids and vitamins

C. Growth regulators

D. Non-absorbent cotton of culture vessels

Answer: D



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135. Rhizogenesis and caulogenesis are initiated by

- A. Auxin and Cytokinin
- B. Auxin and Gibberellin
- C. Gibberellin and cytokinin
- D. Cytokinins and Zeatin

Answer: A



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136. Choose the correct match from the following .

A. Shoot tip culture-Production of virus

free plants

B. Somaclonal variation-Variations due to

gene recombinations

C. Synthetic seeds - embryoids covered

with agar

D. Micropropagation - propagation of
crchinds in large number

Answer: D



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137. Which of the following cannot be
obtained on basal medium?

A. Plantlets from mature embryo

B. Seeding from seed

C. Plantlets from cellus

D. Cellus from explant

Answer: C



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138. The somatic embryos with one set of chromosomes can be obtained through

A. Embryo culture

B. Endosperm culture

C. Shoot tip culture

D. Pollen grain culture

Answer: D



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139. Identify the correct set

A. Seeds cannot germinate on complete medium

B. Embryoids develop on callus only never on the explant

C. Synthetic seeds contain sexual embryos

D. Somaclonal variations are exhibited by plants obtained through tissue culture

Answer: D



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140. Select the correct statement out of the following

A. A suspension culture consist of single cell and small group of cells suspended in a liquid

B. During sub-culture only a part of the culture is transferred in the new media.

C. Sterilization mean complete destruction of micro-organisms.

D. All of these

Answer: D



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141. Totipotency refers to

A. capacity to generate genetically identical plants

B. capacity to generate a whole plant from any plant cell/plant

C. capacity to generate hybrid protoplasts

D. recovery of healthy plants from diseased plants.

Answer: B



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142. Which of the following should be used as an explant to generate a disease free plant ?

A. Anther

B. Ovary cell

C. Shoot up

D. Young embryo

Answer: C



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143. Somaclones are

A. somatic hybrids

B. genetically identical to the original plant

C. used to recover disease free plant

D. sterile plants.

Answer: B



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144. Meristem culture is the culture of

A. axillary or apical shoot meristems

B. anthers

C. plant seed

D. young embryos

Answer: A



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145. Meristem culture is used

A. to produce disease free plants

B. in germplasm conservation

C. in rapid clonal multiplication

D. all of these

Answer: D



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146. Micropropagation involves

A. vegetative multiplication of plants by
using microorganisms

B. vegetative multiplication of plants by
using small explants

C. vegetative multiplication of plants by using microspores

D. non-vegetative multiplication of plants by using microspores and megaspores.

Answer: B



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147. Which of the following shows the correct sequence of steps of plants tissue culture ?

A. Sterilization → hardening →

selection of explant → inoculation →

regeneration → plantlet transfer

B. selection of explant → inoculation →

regeneration → Sterilization →

hardening → plantlet transfer

C. selection of explant → Sterilization

→ inoculation → regeneration →

hardening → plantlet transfer

D. hardening → Sterilization →

selection of explant → inoculation →

regeneration → plantlet transfer

Answer: C



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148. A plant cell without cell wall is called

A. proplast

B. protoplast

C. nucleoplasm

D. explant.

Answer: B



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149. A somatic hybrid between potato and tomato is named as

A. bomato

B. mopato

C. pomato

D. topamo

Answer: C



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150. The enzymes required to obtain protoplast from a plant cell are

A. cellulase

B. chitinase

C. pectinae

D. both (i) and (3).

Answer: D



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Exercise II

1. The 'Hallikar' is a

A. milch breed

B. exotic breed

C. drought breed

D. simple breed

Answer: C



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2. Indian Veterinary Research Institute is located at

A. New Delhi

B. Karnal

C. Hissar

D. Izzat Nagar

Answer: D



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3. Fowl pox is caused by

A. ectoparasites

B. endoparasites

C. bacteria

D. virus

Answer: D



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4. A nutritional disease, found in poultry birds is

A. rickets

B. Ranikhet

C. fowl cholera

D. aspergilosis

Answer: A



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5. The best table bird, among the native breed is

A. Busra

B. Aseel

C. Cochin

D. Ghagus

Answer: B



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6. Gumboro disease in poultry is caused by

A. bacteria

B. virus

C. fungi

D. protozoan

Answer: B



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7. Ranikhet disease is associated with

A. honey bee

B. hens

C. fishes

D. pigs

Answer: B



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8. In poultry coccidiosis is caused by

A. Protozoan

B. virus

C. Taenia

D. fungus

Answer: A



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9. In India, which state occupies first position in poultry

- A. Maharashtra
- B. Kerala
- C. Andhra Pradesh
- D. Uttar Pradesh

Answer: C



10. Which of a fungal disease of poultry

A. 1)Fowl pox

B. 2)Aspergillosis

C. 3)Ranikhet

D. 4)Pullorum

Answer: B



11. Thrush disease' in poultry is caused by

A. Candida

B. Aspergillus

C. Puccinia

D. none of these

Answer: A



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12. The process of elimination of diseased birds from a flock is called

A. brooding

B. dubbing

C. culling

D. deworming

Answer: C



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13. Coryza disease in poultry is spread through

A. litter

B. water

C. air

D. feed

Answer: C



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14. Exotic breed of poultry is

A. White leghorn and Rhode island red

B. Rhode island red and Andalusian

C. Plymouth and Andalusian

D. White leghorn and Andalusian

Answer: A



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15. One of the following is a disease of poultry

A. foot and mouth disease

B. pebrien disease

C. anthrax

D. Ranikhet disease

Answer: D



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16. Which of the following is related with the breed Nili Ravi

A. Cow

B. Pig

C. Sheep

D. Buffalo

Answer: D



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17. Buffaloes are better than cows, because they

A. live longer

B. give more milk

C. are disease resistant

D. All of the above

Answer: D



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18. The animal most useful on difficult terrains is

A. mule

B. yak

C. camel

D. elephant

Answer: A



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19. The cross breed of cattle is

A. Ongole

B. Sunandini

C. Tharparkar

D. kangayum

Answer: B



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20. Jaffrabbadi is a breed of

A. sheep

B. cattle

C. horse

D. buffalo

Answer: D



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21. National Dairy Research Institute (NDRI) is situated in

A. Lucknow

B. Patna

C. Karnal

D. Ludbiana

Answer: C



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22. Cryopresevation technique is preservation

- A. of living beings in chemicals
- B. at very low temperature
- C. throught exposure to radiation
- D. through use of gases

Answer: B



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23. An exotic breed of cow is

A. ongole

B. Friesian

C. Hallikar

D. Deoni

Answer: B



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24. Choose the correct combination of alphabets which matches the zoological names given in column-I with their common name given in column-II

Column-I

(zoological Names)

A) *Sus scrota*

B) *Ovis aries* ~~2~~ 3

C) *Copra capra* 4

D) *Equus caballus*

Column-II

(Common Names)

1) Horse

2) Pig

3) sheep

4) Goat

A B C D

1) 2 4 3 1

~~2) 2 3 4 1~~

A B C D

2) 1 3 4 2

4) 4 2 3 1



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25. Famous Angoora wool is obtained from

A. sheep

B. rabbit

C. goat

D. yak

Answer: B



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26. High milk yielding cross bred Frieswal cow is the product of

- A. Brown swiss x Sahiwal
- B. Friesian x Sahiwal
- C. Holstein x tharparkar
- D. Brown swiss xx Red sindhi

Answer: B



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27. The drones in honeybee are

- A. fertile male
- B. fertile female
- C. sterile male
- D. sterile female

Answer: A



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28. Drone honeybee lives for

A. one weeks

B. five weeks

C. ten weeks

D. 15 days

Answer: B



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29. In honey bee colony the bees with reduced wings and reduced mouth parts are respectively

A. Queens and Drones

B. Drones and Queens

C. Worker and Queens

D. Queens and Worker

Answer: A



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30. Queen honeybee is adapted for

A. controlling other beed

B. laying eggs

C. laying eggs and rearing the youngs

D. prepering honey

Answer: C



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31. These bees convert the nectar into honey

in their crop

A. Nurse workers

B. House workers

C. Brones

D. Field workers

Answer: D



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32. Waggle dance in Honey Bee represents

A. distance of food source

B. direction of food source

C. distance and direction of enemy

D. distance and direction of food source

Answer: D



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33. Honeybees stores honey in

A. 1)Stomach

B. 2)Cells of comb

C. 3)Crop

D. 4)Salivary glands

Answer: B



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34. Bee dances are meant for

A. Reproduction

B. Visiting the source of food

C. Communication

D. Killing foreign bees

Answer: C



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35. Pollen basket occurs in Honey Bee on

A. Prothoracic leg

B. Mesothoracic leg

C. Metathoracic leg

D. Union of thorax and abdomen

Answer: C



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36. In which bee, the wax glands are present in

A. Worker

B. Drone

C. Queen bee

D. Both queen and worker bees

Answer: A



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37. One of the following is correct

- A. Drones are diploid bees
- B. Drones have reduced wings
- C. Wings are large in queen
- D. Queen lays eggs

Answer: D



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38. The eggs of laying worker bees are developed into

A. Both the drones and workers

B. only worker bees

C. only drones

D. Drones, workers and Queen

Answer: C



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39. The following are the statements regarding honeybees

I) queen bee is fed with royal jelly by workers

II) Brood chambers in beehive contain fertilized and unfertilized eggs

III) As the drones are capable of flying they feed on plant juices and nectar

IV) Storage of sperms in spermathecae is the sole function of drones

Which of the above are correct?

A. II, III

B. I, II, III

C. II, III, IV

D. I, II

Answer: D



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40. Read the following statements

I) Queen bee is a diploid and fertile female with large abdomen

II) Drones are haploid and sterile males

III) Worker bees are diploid females

In the above the correct statements are

A. I & II

B. II & III

C. I & III

D. I, II & III

Answer: C



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41. Inland fishery' refers is

A. culturing fish in fresh water

B. trapping and capturing fishes from sea
coast

C. deep as fishing

D. extraction of oli form fishe

Answer: A



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42. The study of fishes is called

A. Ornithology

B. herpetology

C. Ichthyology

D. Conchology

Answer: C



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43. Singht is

A. fresh fish

B. marine fish

C. not a fish

D. both (2) and (3)

Answer: A



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44. Which of the following is a marine fish

A. Catla catla

B. Labio rohita

C. Hilsa ilisha

D. Wallago attu

Answer: C



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45. Fish meal is a rich source of

A. potassium

B. iodine

C. iron

D. vitamin-C

Answer: B



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46. Which hormones are administered in aquaculture technique to obtain seed fish in pure form

A. Pituitary hormones

B. Sense hormones

C. Thyroid hormones

D. Parathyroid hormones

Answer: A



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47. pebrine is a disease of

A. Honeybee

B. Fish

C. Silkworm

D. Lac insect

Answer: C



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48. About one pound of silk is obtained from about

A. 21, 000 cocoons

B. 22, 000 cocoons

C. 24, 000 cocoons

D. 25, 000 cocoons

Answer: D



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49. Silk is a product of

A. cuticle of larva

B. cuticle of adult

C. salivary gland of larva

D. salivary gland of adult

Answer: C



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50. Which of the following is not a plant product

A. Hemp

B. Silk

C. Cotton

D. Flax

Answer: B



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51. Larva of Bomobyx mori is called

A. Caterpillar

B. Trochophore

C. Nymph

D. Coccun

Answer: A



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52. Sericteries (silk glands) are modified

- A. salivary glands
- B. digestive glands
- C. excretory glands
- D. endocrine glands

Answer: A



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53. The following is the scale insect and parasite lives on plant

A. Bombyx

B. Laccifer

C. Apis

D. All these

Answer: B



54. Most common reared silkworm in India is

- A. *Bombyx mori*
- B. *Antherea roylei*
- C. *Antherea pernyi*
- D. *Philosamia ricini*

Answer: A



55. Chemical nature of silk is

A. lipid

B. chitin

C. protein

D. carbohyadrate

Answer: C



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56. Bombyx mori(silk moth) lives on mulberry leaves in India. Its life span is

A. 1-2 days

B. 3-4 days

C. 3.5-6 days

D. 8-10 days

Answer: B



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57. Each cocoon of silk moth has about

A. 800 metres of silk thread

B. 900 metres of silk thread

C. 1000 metres of silk thread

D. 1500 metres of silk thread

Answer: C



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58. Maximum production of raw silk is in

A. India

B. Russia

C. China

D. Italy

Answer: C



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59. Silk gland pore is situated on

A. dorsal horn

B. prostheda of mandible

C. endopodite of first maxilla

D. anterior part of hypopharynx

Answer: D



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60. Sonalika and Kalyan Sona are varieties of

A. wheat

B. rice

C. millet

D. tobacco

Answer: A



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

A. shorter rice plant

B. better irrigation facilities

C. early yielding rice variety

D. disease resistance rice variety.

Answer: C



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62. 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 resistance

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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63. Use of certain chemical and radiation to change the base sequences of genes of crop plants is termed

A. recombinant DNA technology

B. transgenic mechanism

C. Mutation breeding

D. gene therapy

Answer: C



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64. 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



- 65.** 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: D



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66.33 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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67. Select the right feature related to emasculation

- I) It is done a male parent
- II) It is done in female parent
- III) It is done in both the parents
- IV) It prevents cross pollination
- V) It prevents self pollination

A. I and IV

B. III and IV

C. I and IV

D. II and V

Answer: D



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68. Scientific knowledge and field technique are necessary to carryout

(I) Clonal selection (II) Pureline selection

(III) Hybridization (IV) Mass selection

A. I & II

B. II & IV

C. II & III

D. I & IV

Answer: C



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69. Emasculation is not necessary in

I) Plant with male bisexual flowers

II) Plant with bisexual flowers used as male parent

III) Plant with unisexual pistillate flowers

IV) Plant with bisexual flowers used as flowers parent

A. I and IV

B. III and IV

C. II and IV

D. I, II and III

Answer: D



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70. Which of the following are the product of single parent?

(I) Clone (II) Pure line

(III) Hybrid (IV) Inbred line

A. Only I & II are correct

B. I, II & IV are correct

C. II, III & IV are correct

D. Only IV is correct

Answer: B



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71. Arrang the following steps of hybridization

procedure in as sequence

Artificial cross pollination

II) Selection of parents

III) Bagging

IV) Emasculation.

A. III, I, II, IV

B. II, IV, III, I

C. IV, II, I, III

D. II, I, IV, III

Answer: B



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72. Identify the correct sequence of events in relation to the procedure of hybridization.

(A) Bagging (B) Tagging

(C) Emasculation (D) Collection of pollen

(E) selecting of parents

A. A,C,B,D,E

B. E,A,C,B,D,

C. C,A,D,E,B,

D. E,C,A,D,B

Answer: D



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73. Match the following

List - I

- A) Sugarcane
- B) Onion
- C) Banana
- D) Rose

List - II

- I) Suckers
- II) Cuttings
- III) Setts
- IV) Bulbils
- V) Bulb

The correct match is

- | | A | B | C | D | | A | B | C | D |
|----|----------|----------|----------|----------|----|----------|----------|----------|----------|
| 1) | III | II | I | IV | 2) | III | V | I | IV |
| 3) | III | V | I | II | 4) | III | I | V | II |

The correct match is



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74. No change in the genotype of the varieties is observed in the following crop improvement methods

(I) Pureline selection (II) Mass selection

(III) Clonal selection (IV) Introduction

A. I and IV

B. ii and iii

C. I and II

D. III and IV

Answer: D



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75. Genotype of the plants remain the same throughout the breeding period in

I) Clonal selection

II) Pureline selection

III) Mass selection

A. II only correct

B. I and III correct

C. II and III correct

D. I only correct

Answer: D



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76. Which of the following varieties can be developed through clonal selection ?

(I) Cotton (II) Groundnut

(III) Onion (IV) Sugarcane

A. A)III only correct

B. B)I & II are correct

C. C)IV only correct

D. D)III & IV are correct

Answer: D



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77. The characters remain stable in the progeny obtained by

(i) Pure - line selection (II) Hybridization

(III) Mass - selection (IV) Clonal selection

A. I, II

B. I, IV

C. II, III

D. IV only

Answer: B



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78. Study the following lists and identify the correct combination

List - I

A) Clonal selection

B) Hybridization

C) Mutation breeding

D) Heterosis

List - II

I) Increases homozygosity

II) Progeny remain stable for any number of generations

III) More number of dominant genes

IV) Incorporation of new characters

V) Creation of new characters

- | | A | B | C | D | | A | B | C | D |
|----|----------|----------|----------|----------|----|----------|----------|----------|----------|
| 1) | I | IV | II | III | 2) | II | IV | V | III |
| 3) | II | IV | III | V | 4) | III | II | IV | V |

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79. Fungal SCP is not suitable for human consumption because of

(I) High MG (II) Low protein

(III) Mycotoxins

(IV) High percentage of RNA

A. I and II

B. ii and iii

C. iii and iv

D. II and IV

Answer: C



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80. Yeast is a good source of

(I) B-complex vitamins

(II) Sulphur containing amino acids

(III) proteins

A. I & II only

B. I & III only

C. III and IV

D. II and IV

Answer: B



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81. Advantages of SCP

(I) Rich in proteins poor in fats

(II) Produced throughout the year

(III) Cultured in any locality

(IV) Cultured only in labs

A. I, II, III correct

B. I, II, IV correct

C. II, III, IV correct

D. IV correct

Answer: A



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82. In virus infected plants the meristem tissues in both apical and axillary buds are free of virus because

- A. The dividing cells are virus resistant
- B. meristems have viral compounds
- C. the cell division of meristems are faster than the rate of virus multiplication

D. Viruses cannot multiply within meristem
cell(s)

Answer: C



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83. Given below are a few statements regarding somatic . Hybridisation .

choose the coorect statements .

I. Protopasts of different cells of the same plants 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: D



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84. To isolate protoplast, one needs:

A. pectinase

B. cellulase

C. both pectinase and cellulase

D. chitinase

Answer: C



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85. Micropropagation is useful

(I) To generate some clonal variation which are exploited for crop improvement

(II) To multiply genetically uniform population

(III) To generate new species

(IV) To produce heterozygous plants

A. I & III are correct

B. III & IV are correct

C. I & II are correct

D. II & III are correct

Answer: C



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86. The nutrient culture medium is a mixture of

I) Essential nutrients

II) Amino acids

(III) Vitamins

(IV) Carbohydrates

A. I & II only correct

B. I, II, III, IV correct

C. I, II, III correct

D. I & IV correct

Answer: B



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87. Regarding embryoids

(I) Develop from embryonic cells

(II) Develop on cells or explants

(III) Gives rise to plants which produce artificial

seed

(IV) Embryogeny resemble that of a sexual embryo

A. I & II Correct

B. II & III correct

C. II & IV correct

D. I && IV correct

Answer: C



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88. Basal medium does not essentially require

(I) Vitamins (II) NAA

(III) Cytokinins (IV) Carbohydrates

A. I and IV

B. II and III

C. III and IV

D. I and IV

Answer: B



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89. Find the correct statements about somatic embryos

(I) They pass through the developmental stages similar to the sexual embryos

(II) They are also known as embryoids

(III) They are used for the synthesis of synthetic seeds

A. I and II

B. II and III

C. I and III

D. I, II and III

Answer: D



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90. Identify the correct sequence of events involved in tissue culture experiments

- (a) Preparation of explant
- (b) Incubation for growth
- (c) Preparation of nutrient culture medium
- (d) Acclimatization of plantlets
- (e) Innoculation of explant
- (f) Sterilization of nutrient medium

A. c, f, a, e, b, d

B. c, a, f, e, b, d

C. c, a, e, f, b, d

D. c, d, f, e, b, a

Answer: A



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91. Match the following columns

Column-I	Column-II
A) Golden rice	i) Armyworm
B) Bt Toxin	ii) Rich in vitamin A
C) RNAi	iii) Cry protein
D) Lepidopterans	iv) Gene silencing

A. A)A-ii,B-iii,C-iv,D-i

B. B)A-iii,B-iv,C-i,D-ii

C. C)A-iv,B-i,C-ii,D-iii

D. D)A-ii,B-i,C-iii,D-iv

Answer: C



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92. Study the following lists

List - I

- A) Morgan
- B) Steward
- C) Murashige and Skoog
- D) Nathans

List - II

- I) Basal medium
- II) Term totipotency
- III) Restriction nucleases
- IV) Anther culture
- V) Experimentally demonstrated totipotency

A B C D

A B C D

A B C D

A B C D

- 1) II V I III 2) III V I IV 3) V IV III II 4) II V III I



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93. Study the following lists

List - I

- I) Low cytokinin to auxin ratio
- II) Low auxin to cytokinin ratio
- III) Sodium hypochlorite
- IV) Sodium alginate

List - II

- A) Disinfectant
- B) Synthetic seeds
- C) Solidifying agent
- D) Rhizogenesis
- E) Caulogenesis

1) I = E ; II = D ; III = B ; IV = A

3) I = D ; II = E ; III = A ; IV = B

2) I = C ; II = D ; III = A ; IV = B

4) I = B ; II = A ; III = D ; IV = C



Exercise Iii

1. Homozygous purelines in cattle can be obtained by

A. mating of related individuals of some breed.

B. mating of unrelated individuals of some breed.

C. mating of individuals of different breed.

D. mating of individuals of different species.

Answer: A



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2. "MOET" technique is used for super-ovulation in

A. Fish

B. Cattle

C. Chickens

D. Elephants

Answer: B



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3. Among the following edible fishes which one is a marine fish having rich source of omega 3 fatty acids ?

A. Maugur

B. Mrigala

C. Mackerel

D. Mystus

Answer: C



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4. Find the correct match

Column A Column B Column

I. Mackerel Rastrelliger Freshwater fish

II. Honey bee Apis Wax

III. Miragala Tacchardia Marine waterfish

IV. Silkworm Bombyx Mulberry silk

A. A)II and IV

B. B)I and II

C. C)IV only

D. D)I and II

Answer: A



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

A. Is useful in producing of animals

B. Is useful in overcoming inbreeding depression

C. Exposes harmful recessive genes that are eliminated by selection

D. Helps in accumulation of superior genes

Answer: B





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6. Following are all breeds of cows except

A. Jersey

B. Nagpuri

C. Sahiwal

D. Sindhi

Answer: B



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7. The guts of cow and buffalo possess

A. Ficus spp

B. Chlorella spp

C. Methanogens

D. Cyanobacteria

Answer: C



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

A. Ayrshire

B. Ghagus

C. Karakanath

D. Scampi

Answer: A



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9. Which one of the following poultry birds is not an English breed ?

A. Sussex

B. Australorp

C. Orpington

D. Minorca

Answer: D



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10. Human proteins can be produced in the milk or semen of farm animals true or false?

A. true

B. False, proteins cannot be produced in milk

C. False, proteins cannot be produced in semen

D. False, animals are not used for proteins production

Answer: A



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11. Lymphoid leucosis is a poultry disease caused by

A. Virus

B. Fungi

C. Helminths

D. Bacteria

Answer: A



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12. Fin rot of fish is caused by

- A. Aeromonas
- B. Pseudomonas
- C. Branchiomyces
- D. Xenopsylla

Answer: A



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13. Cast nets' are used to catch

- A. Marine fishes
- B. Estuary fishes
- C. Fresh water fishes
- D. All of the above

Answer: D



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

A. *Apis mellifera*

B. *Apis dorsata*

C. *Apis florea*

D. None of these

Answer: A



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15. *Nosema bombycis* which causes pebrine in silk worms is a

A. Fungus

B. Virus

C. Bacterium

D. Protozoan

Answer: D



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16. Muga silk worm feeds on

A. Shorea

B. Terminalia

C. Machilus

D. Morus

Answer: C



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17. Silk contains a proteins known as

A. Fibroin

B. Casein

C. Sericin

D. Both (1) and (3)

Answer: D



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

A. Ayshire

B. Ghagus

C. Kadaknath

D. Scampi

Answer: A



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19. Select the group having only buffalo breeds in India from the following

A. Surti, Mehsana, Muraah, Nagpuri

B. Mehsaan, Murrah, Nagpuri, Haryana

C. Murrah, Nagpuri, Haryana, Ongole

D. Nagpuri, Haryana, Ongole, Sindhi

Answer: A



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20. Bovine spongiform encephalopathy is a disease caused by prions in a

A. sheep

B. cow

C. potato

D. man

Answer: B



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21. Percentage composition of fibroin and sericin in silk is

A. 50:40

B. 80:20

C. 30:70

D. 80:60

Answer: B



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22. Forward stereoscopic visual field will be greatest in

A. Cat

B. Deer

C. Rabbit

D. Horse

Answer: A



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23. Bovine spongiform encephalopathy is a disease caused by prions in a

A. sheep

B. cow

C. potato

D. man

Answer: B



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24. Which one of the following is the american poultry breed ?

A. Australorp

B. Minorca

C. Aseel

D. Rhode Island Red

Answer: D



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25. In honey, the percentage of maltose and other sugar is

A. 9.2

B. 8.81

C. 10.5

D. 11.2

Answer: B



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26. Choose the minor carp from the following

A. *Cyprinus carpio*

B. *Anguilla* sp

C. *Labeo bata*

D. *Ctenopharyngodon idella*

Answer: C



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27. Statement A : Ranikhet disease is the disease of poultry.

Statement B : It is caused by a virus

Select the correct description

- A. Statement A is false and B is true
- B. Both the statement A and B are false
- C. Both the statement A and B are true
- D. Statement A is true and B is false

Answer: C



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28. Which one of these diseases in animals is caused by *Babesia bigmima*?

A. Rinderpest

B. Tick fever

C. Anthrax

D. Diarrhoes

Answer: B



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29. In poultry first deworming is usually done around this age

A. 4 weeks

B. 8 weeks

C. 12 weeks

D. 16 weeks

Answer: B



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30. In poultry, first deworming is usually done around this ago

A. 4 weeks

B. 8 weeks

C. 12 weeks

D. 16 weeks

Answer: B



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31. Which one of the following is the american poultry breed ?

A. Australorp

B. Minorca

C. Assel

D. Rhode Island Red

Answer: D



Watch Video Solution

32. In honey, the percentage of maltose and other sugar is

A. 9.2

B. 8.81

C. 10.5

D. 11.2

Answer: B



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33. The life span of honey bee drone is

A. 3 - 5 months

B. 1 - 2 months

C. 6 - 7 months

D. 10 - 12 months

Answer: B



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34. Which one of the following is not a major carp?
carp?

A. Catla-catla

B. *Labeo rohita*

C. *Puntius ticto*

D. *Cirrhinus mrigala*

Answer: C



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35. A waxy substance produced by honey bee to repair comb is called

A. Propolis

B. Honey dew

C. Nectar

D. Ethylene

Answer: A



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36. Which one of the following is not a major carp?
carp?

A. *Cirrhinus mrigala*

B. Puntius ticto

C. Ctenopharyngodon idella

D. Labeo rohita

Answer: B



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37. Honey is

A. Acidic

B. Neutral

C. Alkaline

D. Basic after some days

Answer: A



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38. Ranikhet disease in poultry is a

A. Viral disease

B. bacterail disease

C. fungal disease

D. parasittic disease

Answer: A



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

A. Pasteurellosis

B. Salmonellosis

C. Coryza

D. Newcastle disease

Answer: D



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40. Compared in a bull a bullock is docile because of

A. Lower levels of adrenalin/noradrenalin in its blood

B. Higher levels of thyroxin

C. Higher levels of cortisone

D. lower levels of blood testosterone

Answer: D



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41. Which one of the following pairs is mismatched?

A. *Bombyx mori* - Silk

B. *Pila globosa* - pearl

C. *Apis indica* - Honey

D. *kenis lacca* - Lac

Answer: B



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42. Which one of the pairs of organisms are exotic species introduced in India ?

A. Nile perch, *Ficus religiosa*

B. *Ficus religiosa*, *Lantana camara*

C. Lantana camara Water hyacinth

D. Water hyacinth, prosopis cineraria

Answer: C



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43. Outbreeding is an important strategy of ani- mal 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 of animals

D. Is useful in overcoming inbreeding depression

Answer: D



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44. In crop improvement programme ,
haploids are important because they

A. require on half of nutrients

B. are helpful in study of meiosis

C. grow better under adverse conditions

D. form perfect homozygous

Answer: D



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45. Triticale has been evolved by intergeneric hybridization between

A. wheat and rye

B. wheat and rice

C. rice and maize

D. wheat and Aegilops

Answer: A



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46. Haploid plant cultures are got from

A. leaves

B. root tip

C. pollen grain

D. buds

Answer: C



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47. The reason why vegetatively reproducing crop plants are best suited for maintaining hybrid vigour is that

A. they can be easily propagated

B. they have a longer life span

C. they are more resistant to disease

D. once a desired hybrid is produced, there are so many chances of losing it

Answer: D



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48. The new varieties of plants are produced by

A. selection and hybridization

B. selection and nitroduction

C. mutation and selection

D. introduction and mutation

Answer: A



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49. One of the most important reason why wild plants should thrive is that these are good source of

A. unsaturated edible oils

B. highly nutritive animals feed

C. genes for resistance to disease and
pests

D. rare and highly sought after fruits of
medical importance

Answer: C



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50. which of the following crops have been brought to india from new world ?

A. Cashew, potato, rubber

B. Mango, tea

C. Tea, rubber, mango

D. Coffee

Answer: A



51. India's wheat yield revolution in the 1960s, was possible primarily due to

A. hybrid seeds

B. increased chlorophyll content

C. mutations resulting in plant height reduction

D. quantitative trait mutations

Answer: C



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52. The name of Norman Borlaug is associated with

A. Green revolution

B. Yellow revolution

C. White revolution

D. Blue revolution

Answer: A



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53. Which of the following is generally used for induced mutagenesis in crop plants?

A. Alpha particles

B. X-rays

C. UV rays (260 nm)

D. Gamma rays (from cobalt 60)

Answer: D



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54. Why is vivipary and undersirable character for annuyal crop plants?

A. It reduces the vigour of plant

B. The seeds cannot be stored under normal conditions for the next season

C. The seeds exhibit long dormancy

D. It adversely affects the fertility of the plant

Answer: B



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55. Three crops that contribute maximum to global food grain production are

- A. wheat, rice and maize
- B. wheat, maize and sorghum
- C. rice , maize and sorghum
- D. wheat, rice and barley

Answer: A



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56. Which one of the following pairs is wrongly matched ?

A. Fruit juice - pectinase

B. Textile - amylase

C. Detergents - lipase

D. Alcohol - nitrogenase

Answer: D



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57. Somaclones are obtained by

- A. Irradiation
- B. Genetic engineering
- C. Tissue culture
- D. Plant breeding

Answer: C



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58. Polyethylene glycol method is used for :

- A. Seedless fruit production
- B. Energy production from sewage
- C. Gene transfer without a vector
- D. Biodiesel production

Answer: C



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

A. Somatic hybridization

B. Biofortification

C. Biomagnification

D. Micropropagation

Answer: B



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60. 'Jaya' and 'Ratna' developed for green revolution in India are the varieties of

A. 1)Maize

B. 2)Rice

C. 3)Wheat

D. 4)Bajra

Answer: B



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61. The most common substrate used in distilleries for the production of ethanol is

- A. Corn meal
- B. Soya meal
- C. Ground gram
- D. Molasses

Answer: D



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62. Himgiri developed by hybridisation and selection for disease resistance against rust pathogens is a variety of

A. Chilli

B. Maize

C. Sugarcane

D. Wheat

Answer: D



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63. Which of the following shows maximum genetic diversity in India ?

A. Groundnut

B. Rice

C. Maize

D. Mango

Answer: B



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64. To obtain virus - free healthy plants from a diseased one by tissue culture technique, which part/parts of the diseased plant will be taken?

A. Apical meristem only

B. Palisade parenchyma

C. Both apical and axillary meristems

D. Epidermis only

Answer: C



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65. Which of the following enhances or induces fusion of protoplasts ?

- A. Polyethylene glycol and sodium nitrate
- B. IAA and kinetin
- C. IAA and gibberellins
- D. Sodium chloride and potassium chloride

Answer: A



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66. A technique of micropropagation is

A. Somatic embryogenesis

B. Protoplast fusion

C. Embryo rescue

D. Somatic hybridization

Answer: A



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67. A protoplast is cell

A. without cell wall

B. without plasma membrane

C. without nucleus

D. Undergoing division

Answer: A



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68. 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 of animals
- D. is useful in overcoming inbreeding depression

Answer: D



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