BIOLOGY

BOOKS - MTG BIOLOGY (HINGLISH)

STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION

Strategies For Enhancement In Food Production

1. India and china have more than 70% of world livestock population. However, their contribution to world farm produce is only

A. 10%

B. 25%

C. 40%

D. 50%

Answer: B

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2. Which of the following procedures are followed in dairy farm management ?

(i) Regular inspections and visits by veterinary doctors.

(ii) Usage of manure to increase copy yields.

(iii) Adequate environmental condition is provided.

(iv) Weeding away unproductive and harmful plants from the brood house.

A. (i) and (ii)

B. (i) and (ii)

C. (iii) and (iv)

D. All of these

Answer: B

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3. Which of the following is the "bird flu virus" ?

A. $H5N1$

B. Haemophilus influenzae

C. HIV

D. Rhino virus

Answer: A

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4. 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.

B. Statement 1 is correct but statement 2 is incorrect.

C. Statement 1 is incorrect but statement 2 is correct.

D. Both statements 1 and 2 are incorrect.

Answer: A

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5. The infectious and contagious bacterial disease that affects cattle, buffaloes, horses, sheeps and goats is

A. anthrax

B. rinderpest

C. tick fever

D. necrosis

Answer: A

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6. The term " breed" refers to

A. a group of animals not related by descent but similar in most characters

B. a group of animals related by descent and similar in most characters

C. a group of animals related by descent but have alomost different characteristics

D. a group of animals neither related bu descent nor have similar characteristics.

Answer: B

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7. Which of the following is an improved variety of chicken ?

A. Jersey

B. Leghorn

C. Himgiri

D. Kalyan Sona

Answer: B

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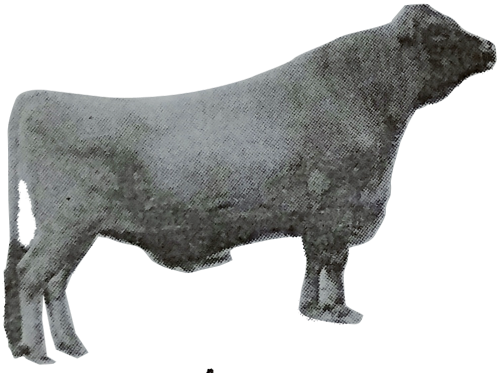
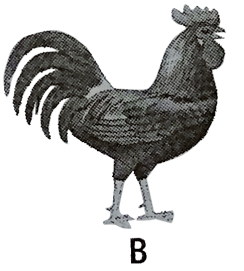
8. A is an improved breed of cattle and B is an improved breed of chicken.

Which of the following options correctly identifies A and B ?



A



B

A. A -Jersey, B-Leghorn

B. A-Surti, B-Sangamneri

C. A-Marwari, B-Sirohi

D. A-Beetal, B-Jamunapari

Answer: A

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9. Which of the following two matches are incorrect ?

	Exotic breeds of cattle	Country of origin
(i)	Jersey	Holland
(ii)	Holstein-Friesian	Germany
(iii)	Ayrshire	Scotland
(iv)	Brown Swiss	Switzerland

A. (i) and (iii)

B. (i) and (ii)

C. (ii) and (iii)

D. (ii) and (iv)

Answer: B

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10. In which of the following options, the different breeds are not correctly placed ?

A.	Breeds of buffalo Murrah	Breeds of cattle Hallikar
B.	Breeds of buffalo Bhadawari	Breeds of cattle Kankrej
C.	Breeds of buffalo Mehsana	Breeds of cattle Tharparkar
D.	Breeds of buffalo Chegu	Breeds of cattle Jaffarabadi

Answer: D

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11. Read of the following statements regarding poultry farm management.

(i) Poultry birds include chicken, ducks, turkey and geese.

(ii) Brooder hous should be crows-free, rain proof and protected from predators.

(iii) The most common egg-type variety used for commercial production throughout the world is single comb white leghorn and its various strains.

(iv) Approximately 14 to 16 hours of light including daylight are required for optimum egg production.

Which of the above statements are correct ?

A. (iii) and (iv)

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

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

D. (i),(ii),(iii) and (iv)

Answer: D

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12. Which of the following is a draught breed of Indian cattle ?

A. Malvi

B. Gir

C. Sahiwal

D. Deoni

Answer: A

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13. Holstein-Friesian, Brown Swiss and Jersey are all well known

A. exotic breeds of cow

B. exotic breeds of goat

C. exotic breeds of poultry

D. animal husbandry scientists.

Answer: A

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

A. Ayrshire

B. Ghagus

C. Kadaknath

D. Scampi

Answer: A

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15. Which one of the followinf poultry birds is not an English breed ?

A. Sussex

B. Australorp

C. Orpington

D. Minorca

Answer: D

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

A. Brown Swiss $\times$ Sahiwal

B. Friesian $\times$ Sahiwal

C. Holstein $\times$ Tharparkar

D. Brown Swiss $\times$ Red sindhi.

Answer: B

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17. 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. Artifical insemination

Answer: B

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18. Fill up the blanks in the following paragraph by selecting the correct option.

Inbreeding increase $\underline{i}$. This inbreeding is necessary if we want to evolve a $\underline{ii}$ in any animal. Inbreeding exposes harmful $\underline{iii}$ genes that are eliminated by selection.

A. (i) heterozygosity, (ii) puer line, (iii) dominant

B. (i) heterozygosity, (ii) breed, (iii) recessive

C. (i) heterozygosity, (ii) puer line, (iii) recessive

D. (i) homozygosity, (ii) breed, (iii) dominant

Answer: C

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19. 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 genes.

Answer: B

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20. 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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21. Continued inbreeding, especially close inbreeding generally results in

A. inbreeding depression

B. inbreeding stimulation

C. inbreeding hybridisation

D. inbreeding mutation.

Answer: A

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22. 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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23. Given below are four statements (i)-(iv). Which two of the following statements are correct ?

(i) It is estimated that more than 70 percent of the world livestock population is in India and China.

(ii) Stringent cleanliness and hygiene (both of the cattle and the handless) are of paramount importance while milking, storage and transport of the milk and products.

(iii) Out-breeding is the breeding between animals of the same breed only.

(iv) Corsses between different breeds is called inbreeding.

A. (i) and (ii)

B. (ii) and (iv)

C. (i) and (iv)

D. (ii) and (iii)

Answer: A

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24. A breed of cow is mated with closely related breed for five generations. It was found that production of milk has reduced subsequently and the animals are not keeping good health. Which of the following methods of animals breeding can overcome this problem?

A. Hybridisation

B. Controlled breeding

C. Out-crossing

D. Crossing breeding

Answer: C

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25. The breeding carried out between animals of different breeds is called

A. out-crossing

B. cross-breeding

C. inbreeding

D. both (a) and (b)

Answer: B

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26. 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, superior females

C. normal males, normal females

D. superior males, superior females

Answer: D

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27. Which of the following is example of cross-breed ?

A. Mule

B. Hilsa

C. Hisardale

D. Sahiwal

Answer: C

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28. Hisardale is a new breed of sheep developed in Punjab by crossing

A. Merino ram and Bikaneri ewe

B. Assel ram and White leghorn ewe

C. Rhode Island ram and White leghorn ewe

D. Cochin ram and Ghagus ewe.

Answer: A

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

A. interspecific hybridisation

B. intervarietal hybridisation

C. intergeneric hybridisation

D. intravarietal hybridisation.

Answer: A

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30. A mule is produced by the interspecific hybridisation between

A. Hisardale and merino rams

B. male donkey and mare

C. female donkey and a male horse

D. Merino ram and Bikaneri ewe.

Answer: B

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31. Fill in the blanks in the following statements by selecting the correct option.

(i) All hybrids of poultry are produced by _____ inbred stocks.

(ii) Super hybrids are obtained when genetically parents are used in the cross.

(iii) A_____ is produced from a cross between female horse (mare) and male donkey.

A. (i) mating, (ii) same, (iii) mule

B. (i) crossing, (ii) same, (iii) hinny

C. (i) crossing, (ii) different, (iii) mule

D. (i) mating, (ii) different, (iii) hinny

Answer: C

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32. 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 individu
(B)	Interspecific hybridisation	(ii)	Mating of animals of same breed b
(C)	Cross-breeding	(iii)	Mating of animals of two different
(D)	Inbreeding	(iv)	Mating of animals belonging to di

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

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

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

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

Answer: A

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33. Artificial insemination involves

A. super ovulation

B. semen collection

C. egg collection

D. embryo collection.

Answer: B

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34. Read the following statements and select the incorrect one.

A. Semen is preserved for artificial insemination by heating.

B. Mating of animals within the same breed, but having no common ancestors on either side of their pedigree upto 4-6 generations is called as out crossing.

C. Example of interspecific hybridisation is mule.

D. Hinny is a hybrid between the female ass and stallion.

Answer: A

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35. Artificial breeding of cattle is brought about by

A. artificial insemination

B. super ovulation and embryo transplanation

C. MOET

D. all of these

Answer: D

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36. MOET stands for

A. Multiple Ovulation and Egg Transfer Technology

B. Multiple Ovary and Embryo Transfer Technology

C. Multiple Ovulation Embryo Transfer Technology

D. Method of Egg Transfer Technology.

Answer: C

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37. Given below are the three statements each with one or two blanks. Select the option which correctly fills up of the blank in any two statements.

A. Inbreeding helps in accumulation of $\underline{i}$ and elimination of $\underline{ii}$.

B. In MOET a cow is administered hormones, with $\underline{i}$ like activity, to induce follicular maturation and super ovulation.

C. Hisaedale is a new breed of sheep developed in Punjab by crossing $\underline{i}$ and $\underline{ii}$.

A. A-(i) less desirable genes, (ii) superior genes B-FSH

B. A-(i)superior genes, (ii) less desirable genes, (ii) less C-(i) Bikaneri ewes (ii) Marino rams

C. B-(i) LH

C-(i) Sahiwal ewes, (ii) Deoni rams

D. B-(i) progesterone

C-(i) Kankrej ewes, (ii) Dangi rams

Answer: B

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

(A) Multiple ovulation $\underline{i}$ transfer teachnology is for $\underline{ii}$ improvement.

(B) In it a cow is administered $\underline{i}$ to induce follicular maturation and $\underline{ii}$ ovulation.

(C) Instead of one egg per cycle, $\underline{i}$ eggs are produced through it.

(D) The fertilised $\underline{i}$ at $\underline{ii}$ celled stages are recovered non-surgically and transferred to surrogate mothers.

A. (A)-(i) pireline, (B)-(i) oestrogen, (ii) poly

B. (A)-(i) embryo, (ii) herd, (D)-(i) zygote, (ii) 4-6

C. (C)-(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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39. Multiple ovulation embryo tranfer technology is related to

A. transfer of super embryo

B. transfer of super eggs

C. super ovulation and embryo trasnfer

D. both (a) and (b)

Answer: C

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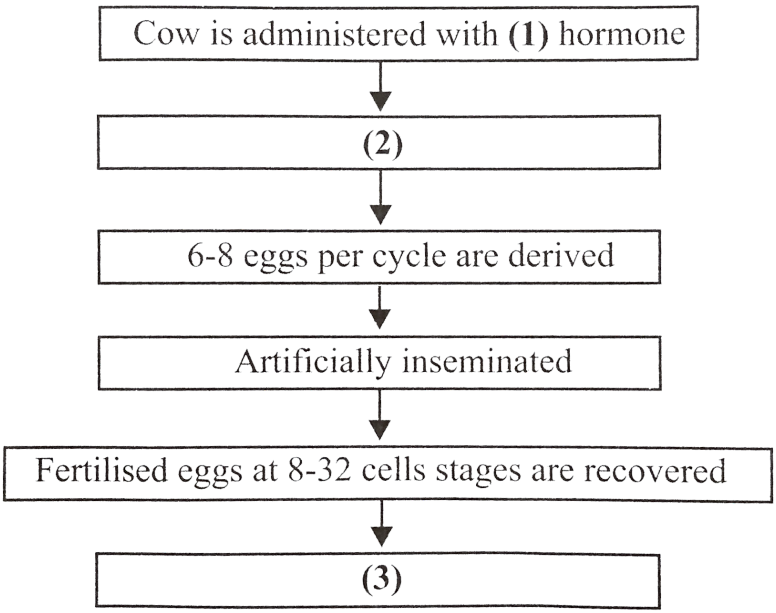
40. Given flow chart represents different steps pf MOET. Study the flow chart carefully and select the correct answer for (1),(2) and (3).



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

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

C. 1-Progesterone, 2-Super ovulation due to induced follicular maturation, 3-Transfer to surrogate mother

D. 1-FSH, 2-Transfer to surrogate mother, 3-Super-ovulation due to induced follicular maturation

Answer: A

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41. Lean meant' 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 due to lesser chances of infection.

Answer: B

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42. In livestock breeding experiments, which of the following stages is transferred to surrogate mothers?

A. Unfertilised eggs

B. Fertiliser eggs

C. 8 to 32 celled embryo

D. Frozen semen

Answer: C

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43. The term 'apiculture' refers to

A. tissue culture

B. pisciculture

C. bee-keeping

D. animal-keeping

Answer: C

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44. Which of the following plays a role in indigenous system of medicine?

A. Plant breeding

B. Fisheries

C. Apiculture

D. MOET

Answer: C

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45. In honey, the main consituent is

A. calcium

B. sugar

C. protein

D. water

Answer: B

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46. Beewax is the secretion of abdominal glands of

A. drones

B. worker bees

C. queen bees

D. worker and queen bees.

Answer: B

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47. Select the incorrect statement from the following.

A. Apiculture provides additional income generating source to the farmers.

B. Bee-keeping is labour intensive process.

C. Bee venom is used to cure certain diseases like gout and arthritis.

D. Honey is used as laxative antiseptic and sedative.

Answer: B

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48. Apis dorsata is

A. little bee

B. rock bee

C. European bee

D. Indian bee

Answer: B

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49. Which of the following points are important for successful bee-keepinf?

(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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50. The use of honeybee is

A. to help in pollination

B. production of bees wax

C. production of honey

D. all of these

Answer: D

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51. Keeping beehives in crop fields during flowering period increases

A. crop yield

B. honey yield

C. weeds yields

D. both (a) and (b).

Answer: D

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52. Select the correct option to fill up the blanks in the following statements.

(i) Controlled breeding experoments are carried out using____.

(ii) In MOET technology, the fertilised eggs at_____ cells stages, are recovered and transferred to surrogate mothers.

(iii) In MOET technology, the cow produces_____eggs instead of one egg.

(iv) _____ is an industry devoted to the catching, processing or selling of fish.

A. (i) artificial insemination, (ii) 8-32, (iii) 6-8, (iv) Fisheries

B. (i) artificial insemination, (ii) 8-32, (iii) 6-8, (iv) Silviculture

C. (i) artificial insemination, (ii) 6-8, (iii) 8-32, (iv) Pisciculture

D. (i) artificial insemination, (ii) 4-8, (iii) 8-32, (iv) Fisheries

Answer: A

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53. Which of the following is not a freshwater fish ?

A. Salmon

B. Mrigal

C. Catla

D. Rohu

Answer: A

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54. Which of the following are the fishery by-products?

(i) Oil , (ii) Manure

(iii) Glue , (iv) Isinglass

(v) Shagreen , (vi) Leather

A. (i), (ii) and (vi)

B. (iii), (iv) and (v)

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

D. All of these

Answer: D

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55. Which of the following are common freshwater fishes ?

A. Mackerel and rohu

B. Rohu, common carp and Catla

C. Hilsa and sardine

D. None of these

Answer: B

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

A. Rohu

B. Hilsa

C. Catla

D. Common carp

Answer: B

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57. Which one of the following is an exotic catp species ?

A. Labeo rohita

B. Cyprinus carpio

C. Labeo bata

D. Cirrihinus mrigala

Answer: B

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58. Which of the following is not correctly matched?

	Common name	Scientific name
(i)	Bombay duck	Harpadon
(ii)	Pomphret	Stromateus
(iii)	Salmon	Anguilla
(iv)	Sardine	Aluitheronema
(v)	singhi	Heteropneustes

A. (ii) and (v)

B. (i) and (iii)

C. (iii) and (v)

D. (iii) and (iv)

Answer: D

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59. Aquaculture is the rearing and management of

A. molluscs and crustaceans

B. only freshwater fishes

C. economically useful aquatic plants and animals

D. only aquatic plants

Answer: C

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60. Aquaculture does not include

A. prawns

B. fishes

C. silkworms

D. shell fishery.

Answer: C

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61. Which of the following is correctly matched?

A. Sericulture-Fish

B. Aquaculture-Mosquito

C. Apiculture-Honeybee

D. Pisciculture - Silkmoth

Answer: C

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62. Germplasm collection is the collection of

A. germ cells

B. semens

C. plants/seeds with all the diverse alleles for all genes

D. egg cells.

Answer: C

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63. Select the option showing the correct sequential steps to produce a new genetic variety of a corp.

A. Selection of parents $\rightarrow$ Hybridisation of selected parents $\rightarrow$ Germplasm collection $\rightarrow$ Selection of superior recombinants $\rightarrow$ Testing and release of new varieties

B. Germplasm collection $\rightarrow$ Selection of parents $\rightarrow$ Hybridisation of selected parents $\rightarrow$ Selection of superior recombinants $\rightarrow$ Testing and release of new varieties

C. Selection of superior recombinants $\rightarrow$ Germplasm collection $\rightarrow$ Hybridation of selected parents $\rightarrow$ Selection of parents $\rightarrow$ Testing and release of new varieties

D. Germplasm collection $\rightarrow$ Selection of parents $\rightarrow$ Hybridisation of selected parents $\rightarrow$ Testing and release of new varieties $\rightarrow$ Selection of superior recombinants

Answer: B

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64. 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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65. Match column I with column II and select the correct option from the codes given below.

	Column I		Column II
$A.$	Green revolution	(i)	Milk production
$B.$	Pisciculture	(ii)	Crop plants
$C.$	White revolution	(iii)	Fish production
$D.$	Blue revolution	(iv)	Rearing of fishes

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

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

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

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

Answer: D

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66. The Nobel Lauerate, who developed semi-dwarf wheat varieties in Mexico was

A. Norman E. Borlaug

B. Herbert Boyer

C. William Harvey

D. Typhoid Mary

Answer: A

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67. Jaya and Ratna are the seimw-dwarf varieties of

A. wheat

B. rice

C. cowpea

D. mustard

Answer: B

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68. 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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69. Consider the following three statements and select the correct option starting which ones are tube (T) and which ones are false (F).

(i) Hybridisation is crossing of two or more types pf plants for bringing their traits together in progeny.

(ii) Semi-dwarf rice varieties were derived from IR-8 and Taichung Native -1.

(iii) Hybrid breeding have led to the development of several high yeilding resistant to water stress.

A. $\begin{matrix}(i) & (ii) & (iii)\\ F & T & T\end{matrix}$

B. $\begin{matrix}(i) & (ii) & (iii)\\ T & T & F\end{matrix}$

C. $\begin{matrix}(i) & (ii) & (iii)\\ F & T & F\end{matrix}$

D. $\begin{matrix}(i) & (ii) & (iii)\\ T & T & T\end{matrix}$

Answer: D

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70. Which of the following statements is not correct plant breeding ?

A. It reduce 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: C

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71. Turnip mosaic disease is caused by

A. bacteria

B. viruses

C. nematodes

D. fungi

Answer: B

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72. Which of the following disease is casued by virus ?

A. Tobacco mosaic

B. Late blight of potato

C. Turnip mosaic

D. Both (a) and (b)

Answer: D

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73. Which of the following is incorrectly matched ?

A.

Disease	Causative organism
Green revolution	Bacteria

B.

Disease	Causative organism
Brown rust of wheat	Fungi

C.

Disease	Causative organism
Late blight of potato	Virus

D.

Disease	Causative organism
Red rot of sugercane	Fungi

Answer: C

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74. Which of the following disease is caused by bacteria ?

A. Tobacco mosaic

B. Black rot of crucifers

C. Red rot of sugarcane

D. Late blight of potato

Answer: B

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75. Black rust of wheat is caused by

A. Puccinia

B. Albugo

C. Ustilago

D. Cystopus

Answer: A

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76. Match column I (crop) with column II (corresponding disease resistant variety) and select the correct option from the given codes.

	Column I		Column II
$A.$	Cowpea	(i)	Himgiri
$B.$	Wheat	(ii)	Pusa komal
$C.$	Chilli	(iii)	Pusa Sadabahar
$D.$	Brassica	(iv)	Pusa Swarnima

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

A. Variety — Resistance to disease
Pusa komal — −Bacterial blight

B. Variety — Resistance to disease
Pusa Sadabahar — −White rust

C. Variety — Resistance to disease
Pusa Swarnim — −Tobacco Mosaic Virus

D.	Variety Pusa Shubhra	Resistance to disease –Chilli Mosaic Virus

Answer: A

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78. Which of the following is incorrectly paired?

A. Wheat-Himgiri

B. Milch breed - Sahiwal

C. Rice - Ratna

D. Pusa komal - Brassica

Answer: D

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79. 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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80. Yellow mosaic virus resistant variety " Parbhani Kranti" belongs to

A. bhindi

B. barley

C. chilli

D. cauliflower.

Answer: A

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81. Hairy leaves of many plants are associated with

A. resistant to insect pests

B. resistance to viruses

C. resistance to fungi

D. resistance to bacteria.

Answer: A

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82. 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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83. 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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84. 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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85. Match column I (crop) with column II (corresponding insect pests resistant variety) and select the correct option from the given codes.

	Column I		Column II
$A.$	Flat bean	(i)	Pusa Gaurav
$B.$	Okra (Bhindi)	(ii)	Pusa Sem-2
$C.$	Brassica	(iii)	Pusa Sawani

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

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

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

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

Answer: B

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86. 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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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. Shakti, Rattan and Protina varieties of maize) are rich in

A. lysine

B. glycine

C. fats

D. carbohydrates.

Answer: A

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89. Which of the following can be used for cultivation of SCP ?

A. Animal manure

B. Straw

C. Molasses

D. All of these

Answer: D

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90. 250 g of Methylophilus methlotrophus can be expected to produce _____ tonnes of proteins.

A. 15

B. 25

C. 40

D. 50

Answer: B

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91. Single cell protein can be obtained from

A. bacteria

B. algae

C. fungi

D. all of these

Answer: D

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92. 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), (ii) and (iv)

B. (iii) only

C. (v) only

D. (i) only

Answer: D

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

A. Anther

B. Ovary cell

C. Shoot tip

D. Young embryo

Answer: C

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94. Totipotency refers to

A. capacity to generate genetically identical plants

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

C. capacity to generate hybrid protoplasts

D. recovery of healthy plants from diseased plants.

Answer: B

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95. Match column I with column II and select the correct answer from the given codes.

	Column I		Column II
$A.$	Wax	(i)	Interspecific hybridisation
$B.$	Pollinator	(ii)	Micropopagation
$C.$	Mule	(iii)	Bee
$D.$	Tissue culture	(iv)	Apiculture

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

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

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

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

Answer: B

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96. Hormone responsible for growth of the root in micropropagation is

A. auxin

B. gibberellin

C. cytokinin

D. abscisis acid.

Answer: A

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97. Micropropagation involves

A. vegetative multiplication of plants by using microoganisms

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

A. Sterilisation $\rightarrow$ Hardening $\rightarrow$ Selection of explant $\rightarrow$ Inoculation $\rightarrow$ Regeneration $\rightarrow$ Plantlet transfer

B. Selection of explant $\rightarrow$ Inoculation $\rightarrow$ Regeneration $\rightarrow$ Sterilisation $\rightarrow$ Hardening $\rightarrow$ Plantlet transfer

C. Selection of explant $\rightarrow$ Sterilisation $\rightarrow$ Inoculation $\rightarrow$ Regeneration $\rightarrow$ Hardening $\rightarrow$ Plantlet transfer

D. Hardening $\rightarrow$ Sterilisation $\rightarrow$ Selection of explant $\rightarrow$ Inoculation $\rightarrow$ Regeneration $\rightarrow$ Plantlet transfer

Answer: C

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99. Somaclones are

A. somatic hybrids

B. genetically identical to the original plant

C. used to recover disease free plants

D. sterile plants.

Answer: B

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100. 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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101. Meristem culture is the culture of

A. axillary or apical shoot meristems

B. anthers

C. plant seeds

D. young embryos

Answer: A

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102. A plant cell without cell wall is called

A. proplast

B. protoplast

C. nucleoplasm

D. explant.

Answer: B

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103. A somatic hybride between potato and tomato is named as

A. bomato

B. mopato

C. pomato

D. topamo

Answer: C

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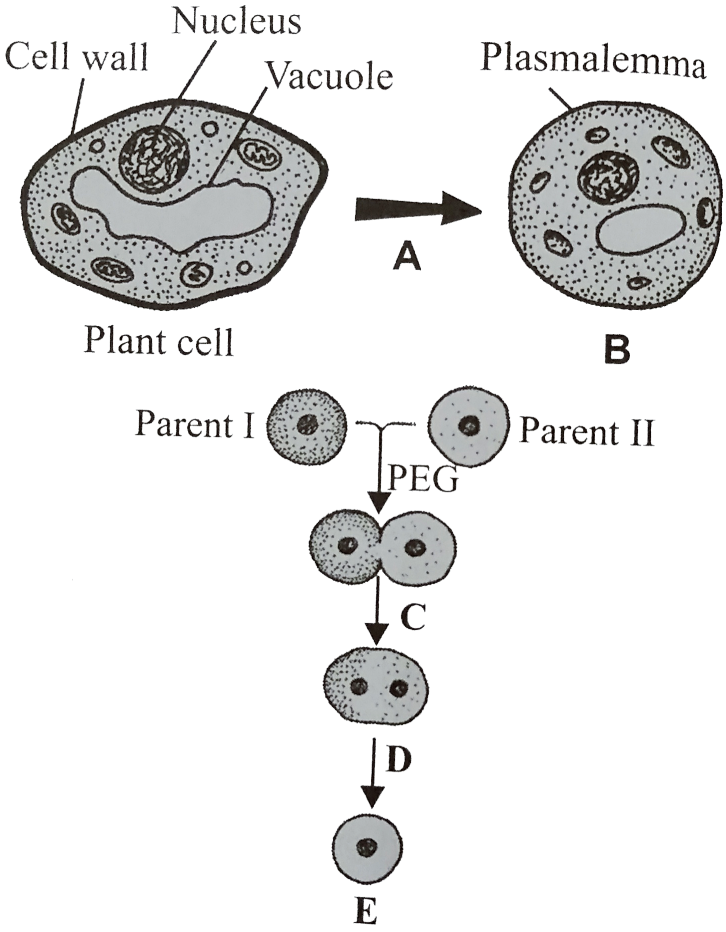
104. Given below is the flow chart showing the process of somatic hybridisation. Identify A,B,C,D and E.



A. A-Cell fusion , B-Nuclear fusion, C-Cellulase and pectinase, D-Ptotoplast, E-Somatic hybride cell

B. A-Cellulase and pectinase, B-Protoplast, C-Cell fusion, D-Nuclear Fusion, E-Somatic hybrid cell

C. A-Protoplast, B-Nuclear fusion, C-Somatic hybride cell, D-Cellulase and pectinase, E-Cell fusion

D. A-Cellulase and pectinase, B-Protoplast, C-Nuclear fusion, D-cell fusion, E-Somatic hybrid cell

Answer: B

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

A. cellulase

B. chitinase

C. pectinase

D. both (a) and (c).

Answer: D

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106. Direction : Carefully read the following information to answer Q.no.1 and Q.no.2

An egg farmer is experimetnting with different feed rations with the aim of increasing his production whilst reducing the cost of the feed per egg produced. The data from two feeding experiments is given below.

Experiment 1

Protein concentration in feed (%)	10	11	12	13	14	15	16
Total vitamin level (mg/kg)	100	100	100	100	100	100	100
Cost of feed ration per 100 hens per day	6.00	7.00	7.50	8.00	8.50	8.75	9.00
Number of eggs per 100 hens per day	70	70	75	80	85	80	80

Experiment 2

Protein concentration in feed (%)	14	14	14	14	14	14	14
Total vitamin level (mg/kg)	50	75	100	125	150	175	200
Cost of feed ration per 100 hens per day	8.00	8.25	8.50	8.75	9.00	9.25	9.50
Number of eggs per 100 hens per day	70	80	85	90	95	95	95

Which feed composition give the least cost per egg produced ?

A. $\text{Protein (concentration (\%)}$ $\text{Total vitamin level}(mg/kg)$
16 100

B. $\text{Protein (concentration (\%)}$ $\text{Total vitamin level}(mg/kg)$
14 50

C. $\text{Protein (concentration (\%)}$ $\text{Total vitamin level}(mg/kg)$
14 100

D. $\text{Protein (concentration (\%)}$ $\text{Total vitamin level}(mg/kg)$
14 150

Answer: D

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107. Direction : Carefully read the following information to answer Q.no.1 and Q.no.2

An egg farmer is experimetnting with different feed rations with the aim of increasing his production whilst reducing the cost of the feed per egg produced. The data from two feeding experiments is given below.

Experiment 1

Protein concentration in feed (%)	10	11	12	13	14	15	16
Total vitamin level (mg/kg)	100	100	100	100	100	100	100
Cost of feed ration per 100 hens per day	6.00	7.00	7.50	8.00	8.50	8.75	9.00
Number of eggs per 100 hens per day	70	70	75	80	85	80	80

Experiment 2

Protein concentration in feed (%)	14	14	14	14	14	14	14
Total vitamin level (mg/kg)	50	75	100	125	150	175	200
Cost of feed ration per 100 hens per day	8.00	8.25	8.50	8.75	9.00	9.25	9.50
Number of eggs per 100 hens per day	70	80	85	90	95	95	95

What are the independent variable in each of the two experiments?

A.

Experiment 1	Experiment 2
Maximum daily egg production	Maximum daily egg production

B.

Experiment 1	Experiment 2
Protein concentration in the feed	Total vitamin level in the feed

C.

Experiment 1	Experiment 2
Total vitamin level the in the feed	Protein concentration in feed

D.

Experiment 1	Experiment 2
cost of feed ration per egg produced	cost of feed ration per egg pr

Answer: B

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108. A certain type of grass has a diploid chromosome number of 8. A similar species of grass has a diploid chromosome number of 10. Interspecific hybridisation between the two species results in sterile hybrids that can, nonetheles, reproduce vegetatively. The diploid chromosome number of these hybrids would be

A. 9

B. 16

C. 18

D. 20

Answer: A

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109. Inbreeding for five generations led to production of homozygous transgenic mice.However, these homozygous males or females were infertile. Which of the following approaches is most preferable and economical to obtain heterozygous transgenic animals continuously ?

A. More transgenic founder (1^{st} animal) should be generated.

B. Crossing (breeding) of transgenic mice with wild typw mice in earlier generations should be done for continued production of transgenic heterozygous offsprings.

C. Inbreeding should be avoided after 5^{th} generation.

D. Homozygous transgenic mice should be mated with heterozygous transgenic mice for continued production of transgenic heterozygous offsprings.

Answer: B

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110. Many attempts to improve livestock in the tropics have been made by 'upgrading ' through crossbreeding them with temperate breeds. The major problems faced during the failed cattle breeding are

A. the breeding programmes have been too complicated in term of logistics, technology and requirements of resources without considering the infrastructure available.

B. indiscriminate crossbreeding of indigenous breeds with exotic breeds without enough consideration of environment conditions for production.

C. lack of analysis of the different socio-economic and culture roles that liverstock play in each situation, usually leading to wrong breeding objectives and neglect of the potential of various indigenous breeds of livestock.

D. All of these

Answer: D

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111. Which of the following statements does not provide an explanation for hybrid vigour ?

A. Under certain circumstances, heterozygotes are superior to either possible homozygotes.

B. Disease-causing, homozygous recessive phenotypes from either parent are masked in the hybrids.

C. Offspring from a hybrid cross usually possess the best of two desirable parents.

D. Inherently, hybrids have no deleterious mutations.

Answer: D

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112. The changes 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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113. 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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114. 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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115. Sonalika and Kalyan Sona are varieties of

A. wheat

B. rice

C. millet

D. tobacco

Answer: A

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

A. Rust of wheat

B. Smut of Bajra

C. Black rot of crucifers

D. Red rot of sugarcane

Answer: C

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

A. the dividing cells are virus resistant

B. meristems have anti viral compounds

C. the cell division of meristems are faster the rate of viral multiplication

D. viruses cannot multiply meristem cell (s).

Answer: C

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

A. shorter rice plant

B. better irrigation facilities

C. early yielding rice variety

D. disease resistant rice variety.

Answer: C

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

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

B. Thick stem, high sugar content and profuse flowering

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

D. Thick stem. Low sugar content, disease resistant

Answer: A

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120. Fungicides and antibiotics are chemicals that

A. enhance yield and disease resistance

B. kill pathogenic fungi and becteria, respetively

C. kill all pathogenic microbes

D. kill pathogenic bacteria and fungi respectively.

Answer: B

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

A. recombinant DNA technology

B. transgenic mechanism

C. mutations breeding

D. gene therapy

Answer: C

Watch Video Solution

122. 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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123. 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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124. 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. (i) and (iv)

D. (ii) and (iii)

Answer: D

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125. 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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126. 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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127. Lysine and tryptophan are

A. proteins

B. non-essential amino acids

C. essential amino acids

D. aromatic amino acids

Answer: C

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128. Micropropagation 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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129. Protoplast is

A. another name for protoplasm

B. an animal cell

C. a plant cell without a cell well

D. a plant cell

Answer: C

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130. To isolate protoplast, one needs

A. pectinase

B. cellulase

C. both pectinase and cellulase

D. chitinase

Answer: C

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

A. Rohu

B. Hilsa

C. Catla

D. Common carp

Answer: B

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

A. Honey

B. Oil

C. Wax

D. Royal jelly

Answer: C

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133. 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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134. The agriculture sector of India employs about

A. 50 percent of the population

B. 70 percent of the population

C. 30 percent of the population

D. 60 percent of the population

Answer: D

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135. 33 percent of India's (Gross Domestics Product) comes from

A. industry

B. agriculture

C. export

D. small-scale cottage industries.

Answer: B

Watch Video Solution

136. 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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137. Assertion: Breeding weeding, feeding and heeding are essential methods for livestock production.

Reason : Livestock management deals with processes and systems that increase yield and improve quality of products.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: B

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138. Assertion : Light is essential in poultry farm management.

Reason : 14-16 hours of light including day light is required for optimum production of eggs.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: A

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139. Assertion : Loss of vigour called inbreeding depression occurs when inbreeding is continued for many generations.

Reason : Quarantine can be done to overcome the harmful effects of inbreeding depression.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: C

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140. Assertion : A single outcross often helps to overcome inbreeding depression.

Reason : Out-crossing is best breeding method for increasing milk productivity.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: B

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141. Assertion : Hisardale is cross breed of sheep.

Reason : Hisardale is developed by crossing Bikaneri ewe and Marino ram.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: A

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142. Assertion : Artificial insemination is very economical method.

Reason : Fewer sperms are required in artificial insemination.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: A

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143. Assertion : In MOET, hormones with progesterone-like activity are given to the cow for inducing super-ovulation.

Reason : After mating the embryos at 4-6 celled stage are recovered and transferred to surrogate mother.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: D

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144. Assertion : Beehives are kept in crop field during flowering period.

Reason : Bees are pollinating agents.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: A

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145. Assertion : Phenotypic superiority of hybrid over either of its parents in one or more traits is termed hybrid vigour.

Reason : Suppression of expression of recessive harmful genes occurs in heterozygotes.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: A

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146. Assertion : Emasculation is removal of male parts.

Reason : Bagging is not required for emasculated flowers.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: C

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147. Assertions : Breeding and development of cultivars resistance to diseases enhances food production.

Reason : Cultivar resistance to disease reduces the dependece on use of fungicides and bacteriocides.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: A

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148. Assertion : Wild varieties of crop plants must ne conserved.

Reason : Genome of wild plants serve as important resources for selection of desired genes like genes for pest resistance.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: A

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149. Assertion : Biofortifications is the most practical aspect to improve health of the people.

Reason : Biofortifications is breeding crops with higher levels of vitamins or minerals or higher proteins and healthier fats.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: A

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150. Assertion : Single cell proteins can help to meet increasing demands of growing population.

Reason : SCP now can be produced in high amount commercially, using low cost substrates.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: A

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151. Assertion : In tissue culture, whole plant can be produced from plant cell.

Reason : The capacity to generate a whole plant from any cell/explant is called totipotentcy.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion

C. If assertion is true bur reason is false.

D. if both assertion and reason are false.

Answer: B

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