BIOLOGY

BOOKS - GR BATHLA & SONS BIOLOGY (HINGLISH)

PLANT BREEDING AND TISSUE CULTURE

Multiple Choice Questions

1. Giegor johann Mendel was a:

A. Polcular biologist

B. Biotechnologist

C. Plant breeder

D. None of these

Answer: C

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2. Hybrids are produced by crossing individuals belonging to:

A. Same species

B. Same genus

C. Different species and genera

D. All of the above

Answer: B

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3. Hybrids are:

A. Brtter than their parents

B. Inferior than parents

C. Exectly like parents

D. Just like clones

Answer: A

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4. Clones are obtained through:

A. Interspecific hybridization

B. Intergeneric hydridization

C. Interaspecific hydridization

D. Vegevative progagation

Answer: D

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5. The method of raising plants from seeds Is called:

A. Cultivation

B. Domestication

C. Emasulation

D. Hybridization

Answer: A

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6. Methods used for crop improvement are:

A. Diotechnology and genetic engineering

B. Selection

C. Htbridization

D. All of the above

Answer: D

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7. Wild plan ts are as important as cultivated plants as they:

A. Carry important genetic element (DNA) or genes

B. High tielding varieties

C. Have hybrid vigour

D. All of the above

Answer: A

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8. Genese for disease resistance and water stress or salt resis-tance are found in wild relatives of:

A. Cultivated plants

B. Domesticated plants

C. Crop plants

D. All ot those

Answer: D

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9. Emasculation is needed during:

A. Tissue culture

B. Transgenic plant production

C. Breeding experiments

D. Vegetative propagation

Answer: C

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10. Self pollination helps in:

A. Pure line selection

B. Development of hybird vigour

C. Development of more productive crops

D. None of the above

Answer: A

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11. Removal of stamens of a flower before crossing is:

A. Sterilization

B. Male sterility

C. Emasculation

D. None of these

Answer: C

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12. Superiority of hybrids over their present refers to:

A. Heterosis

B. Resistance

C. Hypertrophy

D. Atrophy

Answer: A

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13. Disease free plants can be produced from a viral infected diseased plntt through:

A. Merstem culture

B. Hybridization

C. Sexual reproduction

D. None of these

Answer: A

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14. Which of the following methods in not used for crop improvement?

A. Inbreeding

B. Hybridzation

C. Tissue calture

D. Genetic engineering

Answer: A

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15. Inbreeding is possible between two members of a:

A. Species

B. Genus

C. Family

D. None of these

Answer: A

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16. Natural hexaploid crop is:

A. Common wheat (Triticum aestivum)

B. Maize (Zea mays

C. Paddy (Oryza sativa)

D. Cotton (Gossypuim hirsutum)

Answer: A

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17. Diploid wheat is:

A. Triticum monococcum

B. Triticum aestivum

C. Triticum durum

D. Triticum turgidem

Answer: A

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18. Dipoid polant can be made polyploid with the help of:

A. TTC

B. GA

C. Colchicine

D. IAA

Answer: C

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19. IR-8 variety of paddy is introduced in india from:

A. Japan

B. China

C. Sri lanka

D. Philippines

Answer: D

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20. Central Rice Research Institute is at:

A. New delhi

B. Kolkata

C. Cuttack

D. Mumbai

Answer: C

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21. Breeding of new vaeiety of potato is carried out at:

A. CPRI, Shimla

B. CPRI, Patna

C. CRRI, Cuttack

D. IARI, New Delhi

Answer: A

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22. Sharbati Sonora' is a:

A. High yielding wheat

B. Dwarf wheat variety

C. High percentage of proteins containing wheat

D. All of the above

Answer: D

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23. Father of Green Revolution in India is:

A. Norman Borlaug

B. M.S. Swaminathan

C. G.J. mendel

D. None of these

Answer: B

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24. Best method of improving crop yield is:

A. To sow seeds of improved variety

B. Use proper manure

C. Proper use of fungicides and pesticides during growth

D. All of the above

Answer: D

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25. Somatic pybrids are produced using:

A. Protoplast fusion

B. Cross fertilization

C. Self pollination

D. Inbreeding

Answer: A

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26. Pomato is produced as first man made vegetable by:

A. Cross pollination between tomato and potato

B. Somatic hybridization between protoplast of tomato and patato

C. Fusion of calli of tamato and patato

D. None of the above

Answer: B

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27. First man made cereal is:

A. Secale cereale

B. Triticale

C. Triticum aestivum

D. Mixican dwarf, high yielding wheat

Answer: B

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28. Oldest among the cultivated plans:

A. Paddy (Oryza sativa)

B. Wheat (Triticum durum)

C. Rey (Secale cereale)

D. Barley (Hordium vulgare)

Answer: D

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29. Most of the early cultivated plants:

A. Wheat

B. Rice

C. Maize

D. Wheat, rice , maize,barley

Answer: D

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30. The common bread wheat is a hexaploid. It carries genomes of:

A. Two parents

B. Three parents

C. Only on e parents

D. None of these

Answer: B

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31. The term heterosis was given by:

A. Shull

B. Faichild

C. Kolreuter

D. None of these

Answer: A

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32. Adjustment of a new plant in changed environment is called :

A. Adaptation

B. Acclimatization

C. Selection

D. Tolerance

Answer: B

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33. Most of our crops are,

A. Autopolyploids

B. Allopolyploids

C. Auto-alloplyploids

D. None of these

Answer: A

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34. First domesticated wheat was:

A. Triticum aestivum

B. Triticum durem

C. Triticum spelta

D. Triticum monococcum

Answer: D

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35. Seedless variety of watermelon canbe developed by hybridizing 4n plant with 2n plant to induce:

A. Diploidy

B. Triploidy

C. Tetraploidy

D. Hexaploidy

Answer: B

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36. Triploids do not develop:

A. Fertile gametes

B. Seeds

C. Embryo

D. All of these

Answer: D

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37. High tyielding variety of maize is a:

A. Triploid

B. Hexaploid

C. Hybrid

D. Mutant

Answer: C

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38. Heterosis result in an increase in yield upto:

A. $200 - 300\ \%$

B. $300 - 400\ \%$

C. $400 - 500\ \%$

D. $100\ \%$ only

Answer: A

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39. A gift of new world to the old world:

A. Maize and patato

B. Wheat and paddy

C. Ray and paddy0

D. None of these

Answer: A

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40. A gift of old world to new world:

A. Wheat

B. Paddy

C. Rye

D. Barley

Answer: A

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41. A crop surviving only as a result of man made interest:

A. Maize

B. Barley

C. Wheat

D. Paddy

Answer: A

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42. A crop grown by transplantions:

A. Maize

B. Sugarane

C. Paddy

D. Rye

Answer: C

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43. A widely cultivated new world crop of kerala is:

A. Maize

B. Paddy

C. Manihot

D. Musa

Answer: C

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44. Banana is cultivated by:

A. Vegetative means

B. Bulbs

C. Seeds

D. Bulbils

Answer: A

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45. Sharbati Sonora' is a mutant of:

A. Sonora-64

B. Sona

C. Sonalika

D. Bulbils

Answer: A

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46. Mutation in Sonora was induced by:

A. Colchicine

B. Gamma radiation

C. X-rays

D. Chemical mutagens

Answer: B

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47. Uncontrolled plant introduction in India has resulted in:

A. Late blight disease

B. Flag sumt disease

C. Leaf rust of coffee disease

D. All of the above

Answer: D

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48. Green revolution means:

A. Increase in greenary everywhere

B. Increase in production of food crops

C. Increase in growth of green vegetation to develop ecological balance

D. None of these

Answer: B

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49. Process of cultivation of wild plants to fulfil human need is called:

A. Acclimatization

B. Selection

C. Domestication

D. None of these

Answer: C

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50. Diseas resistance in plants can be ineduced by:

A. Mutation

B. Proper manuring

C. Breeding with wild relatives

D. Early sowing

Answer: C

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51. During hydridization bagging is done to:

A. Prevent entry of pollens from outside

B. Aeration

C. Prevent entry of insects carrying viruses

D. None of the above

Answer: A

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52. Triploidy can be induced in:

A. Banana

B. Watermelon

C. Apples and pears

D. All of these

Answer: D

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53. Limitation of mutation breeding is:

A. Lethality

B. Undersired mutation

C. Recessive nature of mutation

D. All of the above

Answer: D

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54. Mutation is :

A. Always bneficial

B. Usually beneficial

C. Occasionally beneficial

D. None of these

Answer: C

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55. Early agriculture was cultivation of plants for:

A. Vegetative parts only

B. Flowers and fruits only

C. Seeds only

D. None of these

Answer: A

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56. Concept of centre of origin was forst time given by

A. Darwin

B. A.P. de Candolle

C. Vavilov

D. Mendel

Answer: C

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57. In cereals, food is stored in their edible starchy:

A. Pericarp

B. Cotyledons

C. Endosperm

D. Embroy

Answer: C

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58. Maize is a classical ecample of a:

A. Seed

B. Single seeded fruit

C. Seed without fruit

D. Fruit without seed

Answer: B

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59. Maize plant produces unisexual flowers but it is:

A. Monoecious

B. Dioecious

C. Trioecious

D. Polygamous

Answer: A

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60. Crossing of two plants of unlike genetic characters in called:

A. Hydridization

B. Natural selection

C. Somaclonal variations

D. None of these

Answer: A

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61. Triticale is inferior than wheat due its:

A. Low protein contents

B. Low glucose content

C. Low starch content

D. All of these

Answer: D

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62. Raphanobrassica is a profuct of:

A. Man made cereal

B. Intergeneric hybridization

C. Interspecific hybridization

D. Intrageneric hybridization

Answer: B

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63. Centre of origin of maize is:

A. Tropical America

B. Peru

C. Brazil

D. China

Answer: A

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64. Genetic diversity is shown by plants due to:

A. Intraspecific hybridization

B. Interspecific hybridization

C. Both (a) and (b) are correct

D. Somaclonal variations

Answer: C

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65. Oldest cultivated fruit is:

A. Apples and pears

B. Coconut

C. Mango

D. Banana

Answer: B

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66. Triticale is used as:

A. Importaint food crop

B. Forage

C. Soil binder

D. Nitrogen fixing legume

Answer: B

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67. An orthdox seed can tolerate:

A. Dehydration and freezing

B. Deyhdration only

C. Freezing condition only

D. None of the above

Answer: A

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68. The native place of Hevea rubber is:

A. India

B. Malaya

C. Indonesia

D. Brazil

Answer: D

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69. Dwarf wheat variety was discovered by:

A. Borlaug

B. Swaminathan

C. Vavilov

D. None of these

Answer: A

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70. Growth of excised tissue on culture medium is referred to as:

A. Tissue culture

B. Hydroponics

C. Soli-less culture

D. In vivo culture

Answer: A

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71. Titus culture technique is applied in:

A. Microprogation

B. Experimental biology

C. Transegenic plant production

D. All of the above

Answer: D

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72. Culture medium is always enriched with:

A. A source of carbon

B. Micro-and macronutrients

C. Auxins and cytokinis

D. All of these

Answer: D

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73. Source of carbon in culture medium is:

A. Carbon dioxide

B. Methane

C. Sucrose

D. Auxins

Answer: C

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74. Importeant requirements for in vitro culturing technique are:

A. A suitable culture medium

B. Proper aeration

C. Aseptic encironmentk, explant andsuitable environment

D. All of the above

Answer: D

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75. Totipotency was first demonstrated by:

A. P.Maheshwari

B. Steward

C. Nitsch

D. Whites

Answer: B

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76. Proper medium for tissue culture is:

A. M.S. medium

B. Whites medium

C. Nitch's medium

D. All of these

Answer: D

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77. Ionic concentration in calculate medium is manintained by:

A. Mixture of inorganic salts added in medium

B. Sucrose

C. Auxins and cytokinis

D. None of the above

Answer: A

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78. pH of culture medium should range between:

A. 5.5 to 6.5

B. 7.2 to 7.5

C. 7.5 to 8.5

D. 8.5 to 9.0

Answer: A

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79. Excised tissue in culture medium exhibits best growth between temperature:

A. $25 - 30^{\circ} C$

B. $35 - 40^{\circ} C$

C. $40 - 45^{\circ} C$

D. $45 - 50^{\circ} C$

Answer: A

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80. Culture medium should be sterilized by:

A. Autoclaving

B. Flame

C. UV-lamp

D. Chemicals

Answer: A

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81. Explant should be sterilized by:

A. Autoclaving

B. UV-lamp

C. Flame

D. Sodium hypochloride solution and detergent solution or chlorine water

Answer: D

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82. Transfer of explant onto culture medium is called:

A. Incubation

B. Incoculation

C. Callus formation

D. None of these

Answer: B

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83. Callus is:

A. Undifferentiated mass of cells

B. Properly differentiated tissue

C. Growing explant with marked degree of differentaion

D. None of the above

Answer: A

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84. In tissue culture experiment, callus represents:

A. Growth without differentiation

B. Growth and differentiation

C. No growth but differentiation

D. None of the above

Answer: A

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85. Totipotency of cell was first reported in:

A. Phloem cells of carrot root

B. Xylem cells of carrot roots

C. Cortical cells of carrot roots

D. All cells of carrot root

Answer: A

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86. The main nitrogen source in culture medium is:

A. Nitrogen gas of atmosphere

B. Nitates

C. Ammonia

D. Peptones or lacto-albumen

Answer: D

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87. Inoculation chamber should be sterilized using:

A. UV-lamp

B. IR-lamp

C. White light

D. Autoclave

Answer: A

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88. Cytokinin is added into the medium to enhance:

A. Cell division in callus

B. Quick differentiation

C. Rooting and shooting

D. All of the above

Answer: A

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89. Auxins and cytokinins together help in:

A. Growth of callus

B. Proper differentiation in callus

C. Formation of callus

D. None of the above

Answer: B

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90. Tissue culture is applied for:

A. Pollen culture

B. Ovary culture

C. Endosperm and ambryo culture

D. All of the above

Answer: D

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91. Embryoids are produced from:

A. Growing callus

B. Zygote

C. Plantlets

D. Organs

Answer: A

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92. Androgenic haploids were first produced by:

A. Pollen culture

B. Embryo culture

C. Tissue culture

D. Callus

Answer: A

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93. Androgenic haploids are:

A. Highly fertile

B. Sterile

C. Fast growing

D. None of these

Answer: B

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94. Androgenic haploids were first produced by pollen culture of:

A. Tomato

B. Patato

C. Datura innoxia

D. Petunia alba

Answer: C

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95. Tissue culture is used frequently in:

A. Micropropagation of orchids

B. Propagation of endangered plants

C. Cryopreservation technique used in germ plasm

D. All of the above

Answer: D

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96. Mass propagation of Dioscored floribunds using mericloning has been done at:

A. IARI, New Delhi

B. CDRI, Lucknow

C. CIMAP,Lucknow

D. CCMB,Hyderabad

Answer: C

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97. Somatic hybridization requires:

A. Chemical fusinges

B. Electrofusion

C. Tissue culture

D. All of these

Answer: D

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98. Disease free plants can be produced from a viral infected diseased plntt through:

A. Protoplast culture

B. Meristem cultuer

C. Pollen culture

D. Embryo culture

Answer: B

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99. Haploidy in angiosperms was first reported in:

A. Datura a stramonium

B. Datera innoxia

C. Datura metel

D. Nicotiana tabacum

Answer: A

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100. Haploids are madr normal and diployed by given proper:

A. Radition treatment

B. Colchicine treatment

C. Auxin and cytokinin treatment

D. None of the above

Answer: B

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101. For micropropagation technique:

A. Pollens are used

B. Shoot apices or root apice are used

C. Phloem cells are used

D. None of the above

Answer: B

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102. Pollen in pollen culture experiment produce:

A. Pollen tubes

B. Embryo sac

C. Male gametes

D. Calli

Answer: D

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103. Haploids are used for studting .

A. Recessive mutation

B. Somaclonal variation

C. Somatic hydridization

D. None of these

Answer: A

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104. BOD incubators are used in:

A. Inculation chamber

B. Sterilization

C. Groeing callus and plantlets

D. Acclimatization of plantlets

Answer: C

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105. During autoclaving the temperature inside autoclave is:

A. $100^{\circ} C$

B. $110^{\circ} C$

C. $121.6^{\circ} C$

D. $131.5^{\circ} C$

Answer: C

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106. For protoplast culture the protoplast is obtained from:

A. Leaf mesophylls

B. Cortical cells

C. Phloem

D. Xylem

Answer: A

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107. Androgenic haploids in Datura innoxia were produced by:

A. Maheshwari and Guha

B. Whites

C. Nitsch and Bourgin

D. None of these

Answer: A

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108. Some pollens are vible for less than 24 hours as in case of:

A. Barley and rice

B. Brinjal

C. Gossypium

D. Date palm

Answer: A

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109. Ideal medium for ovary culture is:

A. Whites medium

B. Nitsch's medium

C. M.S. medium

D. None of these

Answer: A

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110. Coconut milk is added into culture medium to:

A. Enhance growth of callus

B. Enhance differentiation in callus

C. Produce diploid androgenic plants directly

D. Produce embryoids directly

Answer: A

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111. Rare and intergeneric hybrids find more hospitable environment for growth and differentiation:

A. Inside ovule

B. Inside endosperm

C. Onto culture medium

D. None of these

Answer: C

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112. From horticulatural point of view, which of the following is most important ?

A. Micropropagation and ovary culture

B. Pollen culuture and embryo culture

C. Endosperm culture and embryo culture

D. All of the above

Answer: A

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113. First successful embryo culture was carried out by:

A. Nitsch

B. Hanning

C. Districk

D. Maheshwari

Answer: B

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114. Embryo growing in culture medium produces:

A. Seeds

B. Embryoids

C. Plantlets

D. Seedlings

Answer: D

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115. Coconut milk contains:

A. Mineral and water

B. Growth promoting substances

C. Balanced ionic solution

D. None of the above

Answer: B

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116. Poly ethylene glycol (PEG) treatment is used in:

A. Tissue culture

B. Organ culture

C. Embryo culture

D. Somatic hybridization

Answer: D

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117. Proptoplast culture medium is usually devoid of :

A. Agar-agar

B. Microelements

C. Trace elements

D. Growth hormones

Answer: A

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118. Protoplast is obtained from leaf mesophylls using enzymes:

A. Poly ethylene glycol

B. Auxin and cytokinin

C. Cellulase and pectinase

D. None of these

Answer: C

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119. Cybrids are:

A. Cytopasmic hybrids

B. Nuclear hybrids

C. Mutants

D. Synkaryocytes

Answer: A

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120. Cybrids carry genome of:

A. Only one parent

B. Both the parents

C. Fusion of genomes of both the parents

D. no genome

Answer: A

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121. Cybridization gives new recombinations of:

A. Cytoplasmic genes

B. Nuclear genome

C. Plasmids

D. None of these

Answer: A

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122. Frequency of cybridization can be enhanced using:

A. PEG

B. IAA

C. Cytokinins

D. All of these

Answer: A

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123. Fusion of lymphocytes with meeloma in hybridoma technology cells is a classical example of:

A. Somatic hybridization

B. Normal hybridization

C. Micropropagation

D. All of these

Answer: A

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124. Somatic hybridization has been successfully carried out using cytoplasm or protoplasm of:

A. Pentunia hybrida and Petunia parodii

B. Triticum aestivum and secale cereale

C. Raphanus saivus and Brassica campestris

D. None of above

Answer: A

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125. Parsexual hybrids have been produced using protoplasts of:

A. Nicotania glacua and Nicotiana logidorfii

B. Brassica oderacea and Brassica nigra

C. Old wirld cotton and upland cotton

D. None of the above

Answer: A

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126. Somatic hybrdization is used for froducing:

A. Rare hybrids

B. Intergeneric hybrids

C. Interspecific hydrids

D. All types of hybrids

Answer: D

127. Pomato was produced using somatic hybridization by:

A. Malchere

B. Haffman

C. Zelcer

D. Nitsch

Answer: A

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128. Sometic variations generated during tissue culture experiment results in:

A. Hybridization

B. Syncaryocyte formation

C. Heterokaryocyte formation

D. Somaclonal variations

Answer: D

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129. Heterokaryocytes have:

A. A diploid nucles

B. A haploid nucleus

C. Two haploid muclei in fusion state

D. Two haploid nuclei without showing nuclear fusion

Answer: D

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130. Cybrids are:

A. Haploid

B. Diploid

C. Triploid

D. Polyploid

Answer: A

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131. Somaclonal varations develop due to:

A. Effect of chemical s used in medium

B. Mutation

C. Transposons

D. All of the above

Answer: D

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132. Development of embryo on culture medium from excised embryo to produce seedlings and plantlets is referred to:

A. Embryogenesis

B. In viro embryogenesis

C. In vivo enbryogenesis

D. None of the above

Answer: B

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133. Best material for tissue culture is:

A. Embryo

B. Pollens

C. Meristems

D. Vascular strands

Answer: C

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134. Over 100 type of somaclonal variations have been reported in potato by:

A. Carlson

B. Nitsch

C. Whites

D. Shephard et al.

Answer: B

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135. Secondary metabolite production can be enhanced by using:

A. Haploids

B. Liquid culture medium

C. Somatic hydridization

D. Somaclonal variations

Answer: D

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136. Inuced partenogenesis results in development of:

A. Haploid plants

B. Diploid plants from haploid callus

C. Haploid callus from diploid tissue

D. None of the above

Answer: A

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137. Which one will be a true diploid?

A. A synkaryocyte

B. A heterkaryocyte

C. A cybrid

D. A pollen plant

Answer: A

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138. Secondary metabolite production using suspension culture will reduce:

A. Drug yield

B. Pressure over expoitation of endangered plants

C. Alkaloid content

D. None of the above

Answer: B

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139. Shape of protoplast in culture medium is usually:

A. Hexagonal

B. Spherical

C. Ellipsoidal

D. Tubular

Answer: B

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140. Cell protoplast obtained from lraf mesophylls are devoid of:

A. Nucleus

B. Chloroplast

C. Cytoplasm

D. Cell wall

Answer: D

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141. Cell protoplast carries:

A. Negetive charges

B. Positive charges

C. Bipolic character

D. None of these

Answer: A

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142. The ratio of kinetic and auxin in culture medium for quick rooting in cullus should be:

A. $1:1$

B. $1:15$

C. $15:1$

D. $100:1$

Answer: B

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143. Excised tissue or organ on culture medium is celled:

A. Inoculum

B. Explant

C. Callus

D. Embryoid

Answer: B

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144. Arabido brassica was produced using protoplates of:

A. Arabidiopsis thalliana and Brassica campestris

B. Brassica oleracea and Arabidiopsis thalliana

C. Brassica repa and Brassica nigra

D. None of the above

Answer: A

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145. Protoplast fusion between two different species of Tobacco (Nicotiana tabacum and

Nicotiana sylvestris) was successfully carried out by:

A. Medgyesy

B. Nagao et al.

C. Zelcer et al.

D. Whites

Answer: A

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146. To make culture medium semisolid, agar is added into the medium at the rate of:

A. $1.5\ \%$

B. $10\ \%$

C. $15\ \%$

D. $25\ \%$

Answer: A

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147. Light condition best for culture maintenance in culture chambers:

A. Bright light

B. Duffused light

C. Dull light

D. Total darkness

Answer: B

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148. Tissue culture facility is required in biotechnology for producing genetically modified plants during:

A. r-DNA formation

B. Gene splicing

C. Gene cloning

D. Inserting r-DNA in host cells or protoplast and then developing complete plant through callus formation

Answer: D

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149. Pioidy level of cullus can be changed using clohicine in culture medium:

A. Befor differentiation

B. After root rormation

C. After shoot formation

D. After formation of plantlets

Answer: A

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150. Tissue culture technique has been successfully used for producing:

A. Alcoholic beverages

B. Cheese

C. Shikonin (-a dye)

D. Insulin

Answer: C

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151. A plant radised from a single germinating pollen grain under cultural conditions is called a

A. Tetraploid plant

B. Haploid plant

C. Diploid plant

D. Polyploid plant

Answer: B

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152. Axenic culture is best defined as:

A. Cell culture

B. Cell culture free from microorganisms

C. Cell cultue with microbial contaminations

D. Cell culture free from other macroorganisms

Answer: B

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153. Androgenic haploids are:

A. Raising stock for micropropagation

B. Induction of mutation

C. Knowing effect of all genes

D. Preparation of homozygous diploids

Answer: D

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154. First artificial hybrid between carnation and sweet william was produced by:

A. kolreuter

B. Fairchild

C. G.H. Shull

D. Carnerarius

Answer: B

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155. Desired improved varieties of economically useful crops are raised by

A. Natural selection

B. Hydridization

C. Mutation

D. Biofertilizer

Answer: B

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156. Reproducing new plants by cells instead of seeds is known as

A. Biofertilizers

B. Tissue culture

C. Antibiosis

D. Mutation

Answer: B

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157. First pollen plant was produced by:

A. Guha and Maheshwari

B. Swaminathan

C. Guha and Maaheshwari

D. H.Y. Mohan Ram

Answer: A

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158. Variation sin plants produced by tissue culture is known as:

A. Androgenic variation

B. Somaclonal variations

C. Cybridization

D. Induced variations

Answer: B

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159. Triticale is inferior than wheat due its:

A. Wheat and rye

B. Wheat and maize

C. Wheat and barley

D. Rye and maize

Answer: A

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160. Progeny of a cross made between two pure parents show increased vigour and productivity. This is due to:

A. Selection

B. Hybridization

C. Heterosis

D. Mutation

Answer: C

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161. Hybridomas refers to:

A. DNA-DNA hybridization

B. Fused gametic cells of two opposited sexes, one derived from a tumour bering patient

C. Fused somatic cells of tumour bering patients

D. Fusion cell of myeloma and lymphocytes

Answer: D

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162. In high yielding 'hybrid crop varieties' to exploit hybrid vigour, the farmers need to purchase fresh hybrid seed every year, because

A. They are not allowed to grow their own seeds

B. Hybrid vigour is not long lastind due to inbreeding depression

C. Government has accepted Dunkle's proposal

D. It is always associated with increased heterozygocity

Answer: B

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163. It shows correct chronological order of the events occurring during callus culture

A. Callus $\rightarrow$ cell division $\rightarrow$ explant $\rightarrow$ addition of cytokinin $\rightarrow$ cell acquired meristematic property

B. Explant $\rightarrow$ callus $\rightarrow$ cell division $\rightarrow$ addition of cytokinin $\rightarrow$ cell acquired meristematic property

C. Explant $\rightarrow$ cell devision $\rightarrow$ callus $\rightarrow$ addition of cytokinin $\rightarrow$ cell acquired meristematic property

D. Callus $\rightarrow$ explant $\rightarrow$ cell division $\rightarrow$ addition of cytokinin $\rightarrow$ cell acquried meristematic property

Answer: C

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164. Coconut milk contains:

A. Auxin

B. Ethylene

C. Cytokinin

D. Gibberllin

Answer: C

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165. A simple technology has been developed in India for plant breeders and farmers to use two plants as biofetilizers for growing rice. These are:

A. Azotobacter and Rhizobium

B. Chlorella and Spirulina

C. Azolla and nitrogen fixing BGA

D. Riccia and Marchantia

Answer: C

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166. Haterosis is refered to as:

A. Increased vigour in hybrid

B. Orgganogenesis in plants

C. Production os spores

D. Localized over growth

Answer: A

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167. Green revolution has been possible due to development of:

A. Wheat and rice

B. Apples and pears

C. Jowar and bajra

D. Sugarcane and grams

Answer: A

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168. What name has been assigned to the genus produced by a cross between cabbage and radish

A. Secale

B. Bursa psstoris

C. Raphanobrassica

D. Lysogenicophyll

Answer: C

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169. Sometic hybridization is a technique of:

A. Natural breeding

B. Natural pollination

C. Artificial pollination

D. Somatic cell hybridization

Answer: D

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170. Desired improved varieties of economically useful crops are raised by

A. Migration

B. Biofertilizer

C. Hybridization

D. Natural selection

Answer: C

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171. The term heterosis was first used by:

A. Shull

B. Borlaug

C. M.S. Swaminathan

D. R. Mishra

Answer: A

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

A. Somatic hydridization

B. Biofortification

C. Biomagnification

D. Micropropagation

Answer: B

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173. Cross between unrelated group of organisms is called

A. Hybrid

B. Test cross

C. Back cross

D. Heterosis

Answer: A

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174. Emasculation is connected with:

A. Hydridization

B. Clonal selection

C. Mass selection

D. Pure line selection

Answer: A

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175. In maize, hybrid vigour is exploited by:

A. Bombarding the protoplast with DNA

B. Crossing of two inbrid parental lines

C. Harvestom seeds from most productive lines

D. Inducing mutation

Answer: B

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176. Somaclonal varations appear in plants:

A. Growing in polluted soil or water

B. Exposed to gamma rays

C. Raised in tissue culture

D. Transformed by recombinant DNA technology

Answer: C

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177. In crop improvement programme, virus free clones can be obtained through:

A. Embryo culture

B. Shoot apex culture

C. Grafting

D. Hybridization

Answer: B

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178. Pollen grains of a plant whose 2n = 8 are cultured to get callus by tissue culture method. What would be the number of chromosomes in the cells of the callus ?

A. 14

B. 56

C. 28

D. 21

Answer: A

179. Cocunut milk is rich in:

A. Auxins

B. Gibberellins

C. ABA

D. Cytokinins

Answer: D

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

A. Selection

B. Grafring

C. Hybridization

D. Hybridization followed by selaction

Answer: D

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181. Cellular totipotency was first demonstrated by:

A. F.C. Steward

B. T. Schwann

C. A.V. Leeuwenhoek

D. Robert Brown

Answer: A

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182. Totipotency means:

A. Flowerin in a culture medium

B. Development of fruit from a flower in a culture

C. Development of an organism from a cell in culture medium

D. All of the above

Answer: C

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

A. Lysine

B. Leucine

C. Methionine

D. Cystein

Answer: A

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184. Central Rice Research Institute is at:

A. Shimla

B. Coimbatore

C. Dehradun

D. Kolkata

Answer: B

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185. Emasculation is required for:

A. Pure lines

B. Selective hybridization

C. Heterosis

D. None of the above

Answer: B

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186. Plant A is having Chromosomes no 2n=12 and B having 2n=16 Both are crossed to form

allotetraploid C. What is the Chromosomes number of C

A. 14

B. 28

C. 12

D. 16

Answer: B

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187. PLANT BREEDING FOR DISEASE RESISTANCE

A. A good source of resistance

B. Planned hybridization

C. Disease test

D. All of the above

Answer: D

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188. Coconum milk stimulates cell division in callus at it is a rich source of:

A. Auxin

B. Cytokinin

C. Gibberellin

D. Ethylene

Answer: B

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189. Which part would be most suitable for raising virus free plants for micropropagation?

A. Meristem

B. Node

C. Bark

D. Vascular tissue

Answer: A

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190. Which of the following ia s case of wrong matching

A. Micropropagation-In vitro productio of plants in large number

B. Callus-Unorganized mass of cells produced in tissue culture

C. Somatic hybridization-Fusion of two divers cells

D. Vector DNA-Site for t-RNA synthesis

Answer: D

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

A. Cross-hybridisation among the selected parents.

B. Evaluation and selection of parents.

C. Germplasm collection.

D. Selection of superior recombinats.

Answer: C

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192. Micropropagation is a technique

A. Somatic hybridization

B. Somatic embryogenesis

C. Protoplast fusion

D. Embryo resuce

Answer: B

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193. Which of the following enhances or induces fusion of protoplasts

A. Sodium chloride and potassium chloride

B. Polyethylene glycol and sodium nitrate

C. IAA and gibberellins

D. IAA and gibberellins

Answer: B

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194. A true breeding plant is

A. One that is able to breed on its own

B. Produced due to cross-pollination among unrelated plants

C. Near homozygous nd produced offspring of its own kind

D. Always homozygous recessive in its genetic constitution

Answer: C

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Cu

1. Most of the anther and pollen culture experiments were performed on the members of:

A. Solanaceae

B. Cruciferae

C. Cucurbitaceae

D. Fabaceae

Answer: A

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Ncert Corner

1. Which has helped increase yields to a large extent?

A. Plant breeding technology

B. Better management pracitices

C. Increase in acreage

D. None of the above

Answer: A

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2. The entire collection of plants/seeds having all the diverse allelles for all genes in a given crop in called:

A. Green revolution

B. Germplasm collection

C. Gene pool

D. Genome

Answer: B

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3. Semi-dwarf wheat was developed by:

A. Swaminathan

B. N.E. Borlaug

C. Ramdhan

D. None of these

Answer: B

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4. Better-yielding semi-dwarf varieties Jaya and Ratna were developed in India in :

A. Wheat

B. Rice

C. Maize

D. Sugarcane

Answer: B

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5. Pusa Gaurav variety resistant to insect pest developed by hybridization and selection belong to:

A. Flat bean

B. Okra

C. Repessed mustard

D. Wheat

Answer: B

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6. Breeding crops with higher levels of vitamins and minerals or higher protein and healthier fats, the most practical means it improve public health, is called:

A. Biomagnification

B. Biofortification

C. Totipotency

D. BOD

Answer: B

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7. One of the alternate sources of proteins for animal and human nutrition is:

A. Biofortification

B. Single-cell protein (SCP)

C. Explants

D. Somaclones

Answer: B

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8. Any part of a plant aklen out and grown in a test tube under sterile conditions in special nutrien media is called:

A. Explant

B. Ex situ

C. In situ

D. Somaclone

Answer: A

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9. Method of producing housands of plants through tissue calture is caled:

A. Somatic hybridization

B. Micro-propagation

C. Somaclone production

D. Vegetative propagation

Answer: B

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10. Pomato is the result of:

A. Hybridization

B. Somatic hybridization

C. Embryo culture

D. Pollen culture

Answer: B

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11. Virus-free plants can be obtained by:

A. Pollen culture

B. Embryo culture

C. Protoplast ture

D. Meristem culture

Answer: D

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12. Somaclones obtained in tissue culture are:

A. Genetically different from orginal plant

B. Genetically identical to original plant

C. Both (a) and (b)

D. None of the above

Answer: B

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

A. Somaclone production

B. Totipotency

C. Sometic hybrdization

D. None of these

Answer: B

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14. Scientists have succeeded in culting meristems of:

A. Banana

B. Sugarcane

C. Patato

D. None of these

Answer: D

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15. Semi-dwarf rice varieties were derived from:

A. IR-8

B. Taichug Native-1

C. Both (a) and (b)

D. None of these

Answer: C

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