BIOLOGY

BOOKS - UNIVERSAL BOOK DEPOT

1960 BIOLOGY (HINGLISH)

STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION

Strategies For Enhancement In Food Production

1. The centre of origin of wheat is

A. South-east Asia

B. south-west Asia

C. Asia Minor and Afganistan

D. None of these

Answer: B

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2. The origin of sunflower is believed to be in

A. Peruvian Andes

B. Mexico and Central America

C. Brazil

D. USA

Answer: D

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3. Maize evolved in

A. USA

B. Brazil

C. Mexico and Central America

D. Peruvian Andes

Answer: C

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4. South-east Asia is thought to be the centre of origin of

A. Rice, sugarcane, mango and banana

B. Rice and sugarcane and mango

C. Rice and sugercane

D. None of these

Answer: A

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5. Green revolution in India occurred during

A. 1960's

B. 1970's

C. 1980's

D. 1950's

Answer: A

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6. Greatest genetic diversity of plants is found in

A. Central America

B. Homelands

C. South America

D. India

Answer: B

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7. The famous cultivated plant which developed in China is

A. Orange

B. Tea

C. Coffee

D. Cotton

Answer: B

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8. The centre of origin of almond and apple is

A. Asia Minor and Afganistan

B. Peruvian Andes

C. Brazil

D. Mexico

Answer: A

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9. Which of the following crops originated in Peru and Brazil but is now mainly grown in India

A. Maize

B. Potato

C. Groundnut

D. None of these

Answer: C

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10. Name the crop which had its birth place in Tropical America but now the centre of production is Mid-west USA

A. Maize

B. Cocoa

C. Pineapple

D. Oil palm

Answer: A

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11. Barley, coffee and sorghum are native of

A. Afganistan

B. Brazil

C. Ethiopia

D. Peru

Answer: C

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12. Agriculture was originated in mesolithic age about

A. 2000 years ago

B. 3000-10000 years ago

C. 7000-13000 years ago

D. 20000-25000 years ago

Answer: C

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13. Sonalika and kalyan Sona are high yielding varieties of

A. Sugarcane

B. Rice

C. Wheat

D. Maize

Answer: C

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14. Credit for bringing green revolution to India goes to

Or

Scented basmati rice is the contribution of

A. B.P. Pal

B. Norman Borlaug

C. M.S. Swaminathan

D. K.C. Mehta

Answer: C

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15. Total number of centres of origin of crop plants given by Vavilov is

A. 2

B. 4

C. 8

D. 11

Answer: D

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16. Pusa shubhra is a variety of

A. Cauliflower

B. Chilli

C. Wheat

D. Cabbage

Answer: A

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17. The dwarf varieties of wheat brought from Mexico into India were

A. Sonara-64 and Sonalika

B. Sonara-64 and Lerma Roja-64

C. Sharbati sonara and Pusa Lerma

D. Sonalika

Answer: B

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18. Improved Indian variety of wheat, carrying genes of dwarfness and higher percentage of protein and lysine is

Or

Which was first Indian dwarf amber gained variety of wheat made from Sonara 64 by γ-rays (gamma rays)

A. Lerma safed

B. Kalyan

C. Sharbati sonara

D. Sonalika

Answer: C

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19. Semidwarf rice variety IR-8 was developed in

A. Taiwan

B. Phillipines

C. India

D. China

Answer: B

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20. Selection is the method of

A. Plant physiology

B. Plant breeding

C. Genetics

D. Cytology

Answer: B

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21. A change in the chromosome number is called

A. Chromosomal mutation

B. Gene mutation

C. Somatic mutation

D. Polyploidy

Answer: A

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

A. n=7 and x=21

B. n=21 and x=21

C. n=21 and x=14

D. n=21 and x=7

Answer: D

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23. The branch of biology which deals with improvement of plant variety

A. Plant breeding

B. Eugenics

C. Agrology

D. Serendipity

Answer: A

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24. Cross between unrelated group of organisms is called

A. Hybrid

B. Test cross

C. Back cross

D. Heterosis

Answer: A

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25. 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. Germplasm collection

B. Selection of superior recombinants

C. Cross hybridization among the selected parents

D. Evaluation and selection of parents

Answer: A

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26. The process of malting of individuals , which are more closely related than the average of the population to which they belong , is called

Or

Which of the following is not used for crop improvement

A. Inbreeding

B. Hybridization

C. Heterosis

D. Self breeding

Answer: A

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27. Green house crops such as tomatoes and bell pepper produce higher yields. This is due to

A. CO_2 enriched atmosphere leads to higher yields

B. CO_2 is a limiting factor to photosynthesis

C. Due to diffused light in green house

D. Tomatoes and bell pepper are not C_3 plants

Answer: A

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28. Haploid from anther culture were first obtained in

A. Brassica

B. Gossypium

C. Nicotiana

D. Datura

Answer: D

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29. Heterosis requires

A. Selection

B. Crossing

C. Transformation

D. Mutation

Answer: B

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30. 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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31. Production of plant without fertilization is done by

A. Vegetative propagation

B. Transplantation

C. Grafting

D. None of these

Answer: A

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32. The improved variety Indore 2 obtained by mutation breeding belongs to which of the following crop varieties

A. Bajra

B. Cotton

C. Sugar cane

D. Potato

Answer: B

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33. Pure line breed refers to

A. Heterozygosity only

B. Homozygosity only

C. Heterozygosity and linkage

D. Homozygosity and self-assortment

Answer: B

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34. Who coined the term 'heterosis'

A. Shull

B. Huxley

C. Robard

D. Tansley

Answer: A

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35. Which is not true about emasculation of a flower while performing an artificial cross

A. It is removal of anthers from flower

B. It is done before anthesis

C. It is to avoid self pollination

D. It is done in flowers of plants selected as male parent

Answer: D

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36. The offspring from a cross between two individuals differing in at least one set of characters is called

A. Polyploid

B. Hybrid

C. Mutant

D. Varient

Answer: B

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37. Which of the following effect is produced by colchicine

A. Duplication of DNA

B. Duplication of chromosomes

C. Formation of spindle fibres

D. Hinderance in the formation of middle wall

Answer: B

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38. Crop cultivation was first started in

A. Nile river valley

B. Chinese river valley

C. Northern plains of India

D. All of the above

Answer: D

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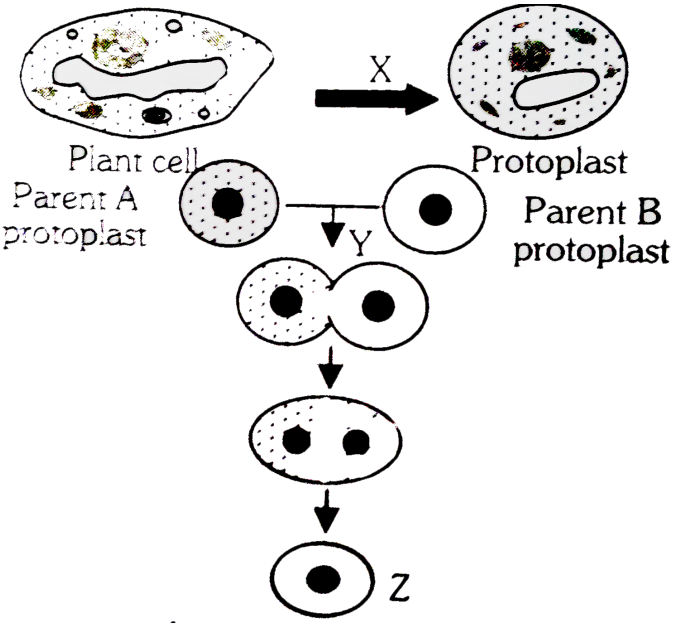
39. The following diagram refer to the process of somatic hybridization.Select the right option in which X,Y and Z are correctly identified



A. X-Cellulase and pectinase, Y-Polythylene glycol, Z-Zygotic cell

B. X-Cellulase and pectinase, Y-Proteinase , Z-Somatic hybrid cell

C. X-Proteinase, Y-Polyethylene glycol , Z-Somatic hybrid cell

D. X-Cellulase and pectinase, Y-Polyethylene glycol, Z-Somatic hybrid cell

Answer: D

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40. Majority of the high yielding varieties of 'Indian rice' have been developed by cross between

A. O.sativajaponicatimes O.sativaindica

B. O.sativa indica times O.nivara

C. O. nivaratimes O.sativajaponica

D. O.nivaratimes O.rufipogon

Answer: A

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41. Tissue culture technique can produce infinite number of new plants from a small parental tissue.The economic importance of the technique is in raising

A. Genetically uniform population identical to the original parent

B. Homozygous diploid plants

C. Development of new species

D. Variants through picking up somaclonal variations

Answer: A

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42. Which is the oldest breeding method

A. Hybridization

B. Selection

C. Mutation breeding

D. Introduction

Answer: B

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43. The indica varieties of rice is crossed with Japonic varieties as these are

A. High yielding

B. Resistant to diseases

C. Cheaper

D. Short life-cycled annual

Answer: B

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44. A man made allopolypoid cereal crop is

A. Hordeum vulgare

B. Raphano brassica

C. Triticale

D. Zea mays

Answer: C

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45. Aims of plant breeding are to produce

A. Disease-free varieties

B. High yielding varieties

C. Early maturing varieties

D. All of the above

Answer: D

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46. Crosses between, the plants of the same variety are called

A. Interspecific

B. Intervarietal

C. Intravarietal

D. Intergeneric

Answer: C

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47. A plant cell has potential to develop into full plant. This property of the plant cell is called

A. Tissue culture

B. Totipotency

C. Pleuripotency

D. Gene cloning

Answer: B

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48. A 'new variety of rice was patented by a foreign company though such varieties have been present in India for a long time.This is related to

A. Co-667

B. Sharbati Sonara

C. Lerma Rojo

D. Basmati

Answer: D

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49. Select the wrong statement

A. Pectinase and cellulase dissolve the cell wall

B. Some cyanobacteria form symbolic association with the fern Azolla

C. Regeneration of cell wall in somatic hybridisation is induced by PEG

D. Plants obtained through pollen culture are always haploids

Answer: C

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50. In maize, hybrid vigour is exploited by:

A. Harvesting seeds from the most productive plants

B. Inducing mutations

C. Bombarding the protoplast with DNA

D. Crossing of two inbreed parental lines

Answer: D

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

A. X-rays

B. UV (260 nm)

C. Gamma rays (from cobalt 60)

D. Alpha particles

Answer: C

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52. In vitro clonal propagation in plants is characterized by

A. Electrophoresis

B. HPLC

C. PCR and RAPD

D. Northern blotting

Answer: C

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53. Piece of sterile plant tissue to be used for tissue culture under aseptic condition is

A. Inoculant

B. Explant

C. Clone

D. Somaclone

Answer: B

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54. Triticale is the hybrid between wheat and

A. Maize

B. Barley

C. Rye

D. Bean

Answer: C

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55. Mutations are caused due to

A. Radioactive mutagens

B. Chemical mutagens

C. Radiation mutagens

D. Change in base sequence

Answer: D

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56. The new varieties of plants are produced by

A. Selection and hybridization

B. Mutation and selection

C. Introduction and mutation

D. Selection and introduction

Answer: A

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57. The reason for vegetatively reproducing crop plants for maintaining hybrid vigour is that

A. They can be easily propagated

B. They have a longer life span

C. They are more resistant to diseases

D. Once a desire hybrid is produced no changes of losing it

Answer: D

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58. Plants having similar genotypes produced by plant breeding are called

A. Clone

B. Haploid

C. Autopolyploid

D. Genome

Answer: A

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59. In which crops is the method of mass selection applied

A. Cross-pollinated

B. Self-pollinated

C. Both self and cross-pollinated

D. Potato and sugarcane

Answer: A

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60. Which of the following condition is hybrid breakdown

A. Failure of hybrid adult to produce functional gametes

B. Failure of the fusion of ova and sperm

plant breed of two species

C. Failure of hybrid zygote to develop into

an offsping

D. None of these

Answer: C

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61. Which one of the following chemical induces polyploidy in plant cells

Or

Autopolyploidy can be induced artificially by

A. 2,4-dichlorophenoxy acetic acid

B. Rifampicin

C. Cytokinine

D. Colchicine

Answer: D

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62. Single cell protein refers to

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

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

C. Proteins extracted from a single cell

D. A specific protein extracted from a single cell

Answer: B

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63. The alkaloid from Colchicum autumnale of Liliaceae induces

A. Sterility

B. Dormancy

C. Cell division

D. Polyploidy

Answer: D

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64. Bombay green banana cultivation is the result of

A. Mass selection

B. Pureline selection

C. Clonal selection

D. Natural selection

Answer: C

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65. Hereditary variations in plants have been produced by the use of

A. X-rays

B. Gibberellic acid

C. D.D.T

D. Auxins

Answer: A

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66. What is a clone

A. A heterozygote produced by sexual means

B. A homozygote produced by asexual means

C. A heterozygote produced by asexual means

D. A homozygote produced by sexual means

Answer: B

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67. Which of the statement about breeding is wrong

A. By inbreeding purelines cannot be evolved

B. Continued inbreeding especially close inbreeding reduce fertility and productivity

C. Cross breeding allows desirable qualities of two different breeds to be conbined

D. Inbreeding exposes harmful recessive genes that are elimlinated by selection

Answer: A

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68. Who used X-rays for the production of mutations

A. Muller

B. Leeuwenhoek

C. Recawsky

D. Hooker

Answer: A

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69. Desired improved variety of economically useful crops are raised by

A. Natural selection

B. Hybridization

C. Mutation

D. Biofertilizer

Answer: B

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70. The Triticum aestivum wheat is

A. Haploid (7 chromosome)

B. Diploid (14 chromosome)

C. Tetraploid (30 chromosomes)

D. Hexaploid (42 chromosomes)

Answer: D

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71. Mutations caused by mutagenic agents are termed as

A. Spontaneous mutations

B. Chemical mutations

C. Induced mutations

D. Chromosomal mutations

Answer: C

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72. What are micro-mutations

A. Union of chromosomes

B. Reduction of chromosomes

C. Changes in genes

D. Polyploidy

Answer: C

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73. Which of the following is most effective chemical mutagene

A. Methane

B. Guanine

C. Carbon tetrasulphide

D. Caffeine

Answer: C

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74. Four inbreed lines of maize are crossed. The cross is

A. Tetraploid cross

B. Double cross

C. Dihybrid cross

D. Tetrahybrid cross

Answer: B

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75. The process of removing stamens from the flower bud during hybridization is called

A. Crossing

B. Selfing

C. Emasculation

D. Caping

Answer: C

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76. The hybrids are generally found to be superior to their parents , it is because of

A. Homozygosity

B. Hybrid vigour

C. Parents are generally weak

D. None of these

Answer: B

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77. Somaclones are obtained by

A. Tissue culture

B. Plant breeding

C. Irradiation

D. Genetic engineering

Answer: A

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78. Which one of the following is commonly used in transfer of foreign DNA into crop plants

Or

Insect tolerant gene from Bacillus thuringiensis is introduced using T plasmid of

Or

Which of the following has been used as cloning vector

A. Trichoderma harzianum

B. Meloidogyne incognita

C. Agrobacterium tumefuciens

D. Penicillium expansum

Answer: C

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79. Transgenic plants are the ones

A. Produced by a somatic embryo in artifical medium

B. Generated by introducing foreign DNA in to a cell and regenerating a plant from that cell

C. Produced after protoplast fusion in artificial medium

D. Grown in artificial medium after hybridization in the field

Answer: B

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80. Cellular totipotency was first demonstrated by

A. F.C. Steward

B. Rebert Hooke

C. T. Schwann

D. A.V. Leeuwenhoek

Answer: A

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81. The crops engineered for glyphosate are resistant/tolerant to

A. Becteria

B. Insects

C. Herbicides

D. Fungi

Answer: C

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82. Crop plants grown in monoculture are

A. Characterised by poor root system

B. Highly prone to pests

C. Low in yields

D. Free from intraspecific competition

Answer: B

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83. In order to obtain virus-free plants through tissue culture the best method is

Or

In Crop Improvement Programmer Virus Free clones can be obtained Through

Which of the following methods is/are used in recovery of healthy plants from diseased plants

A. Anther culture

B. Meristerm culture

C. Protoplast culture

D. Embroyo rescue

Answer: B

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84. The technique that was employed to produce haploids of Datura was

Or

For production of haploids, we culture

A. Meristerm culture

B. Anther culture

C. Embryo culture

D. Protoplast culture

Answer: B

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85. The tumor inducing capacity of Agrobacterium tumefaciens is located in large extra-chromosomal plasmids called

A. Ri plasmid

B. Lambda phage

C. pBR 322

D. Ti plasmid

Answer: D

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86. Callus is

A. Undifferentiated mass of tissue

B. Root formation in culture media

C. Plant hormones

D. Plant by product

Answer: A

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87. Somatic hybrids are produced by

A. Protoplast fusion

B. Tissue culture

C. Pollen culture

D. Hybridoma process

Answer: A

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88. The process in which mature differentiated cells reverse to meristematic activity to form callus is called

A. Dedifferentiation

B. Differentiation

C. Cyto-differentiation

D. Redifferentiation

Answer: A

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89. Sterilization of tissue culture medium is done by

A. Autoclaving of medium at 120°C for 15 minutes

B. Filtering the medium through fine sleve

C. Mixing the medium with antifungal agents

D. Keeping the medium at $-20^{\circ}C$.

Answer: A

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90. Protoplasts of two different species are fused to

A. Micropropagation

B. Somatic hybridization

C. Clonal propagation

D. Organography

Answer: B

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91. Somatic hybridization is a technique of

A. Natural breeding

B. Natural pollination

C. Artificial pollination

D. Somatic cells hybridization

Answer: D

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92. Bt toxin is obtained from

A. Prokaryotes

B. Eukaryotes

C. Both (a) and (b)

D. None of these

Answer: A

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93. A cybrid is hybrid carrying

A. Cytoplasms of two different plants

B. Genomes and cytoplasms of two different plants

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

D. Genomes of two different plants

Answer: C

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94. In transgenics expression of transgene in target tissue is determined by

A. Promoter

B. Reporter

C. Enhancer

D. Transgene

Answer: B

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

A. Both apical and axillary meristems

B. Epidermis only

C. Apical meristem only

D. Palisade parenchyma

Answer: A

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96. Restriction enzyme was discovered by

A. Berg

B. Smith and North

C. Waksman

D. Alexander Fleming

Answer: D

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

Or

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

Or

A novel technique devised to produce vast quantities of strong and healthy plants by rapid vegetative multiplication under controlled conditions

A. Micropropagation

B. Macropropagation

C. Plantlet culture

D. Organ culture

Answer: A

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98. In tissue culture roots can be induced by

A. Lower concentration of cytokinin and higher concentration of auxins

B. Only cytokinin and no auxins

C. No cytokinin and only auxins

D. Higher concentration of cytokinin and lower concentration of auxins

Answer: A

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99. Which enzyme is used for the separation of genetic material

Or

"Molecular scissors" used in genetic engineering is

A. Ligase

B. Restriction endonuclease

C. Hydrolase

D. Amylase

Answer: B

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100. which body of the government of india regulates GM reserch and safety of introducing GM organisms of public services ?

A. Indian Council of Agricultural Research

B. Genetic Engineering Approval committee

C. Reserch Committee on Genetic Manipulation

D. Bio-safety committee

Answer: B

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101. Which of the following is incorrectly matched

(a) Explant	-	Excised plant part used for callus formation
(b) Cytokinins	-	Root initiation in callus
(c) Somatic embryo	-	Embryo produced from a vegetative cell
(d) Anther culture	-	Haploid plants
(e) Callus	-	Undifferentiated mass of cells

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102. DNA probes are used in human for

A. Disease diagnosis

B. Disease control

C. Disease resistance

D. Disease tolerance

Answer: A

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103. Cloning is meant for

A. Production of HGH gene in E coli

B. To preserve the genotype of organism

C. To replace the original gene

D. All of these

Answer: B

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104. Two bacteria found to be very useful in genetic engineering experiment are

A. Nitrosomonas and Klebsiella

B. Escherichia and Agrobacterium

C. Nitrobacter and Azotobacter

D. Rhizobium and Diplococcus

Answer: B

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105. The latest trend in plant disease control is

A. Chemical control

B. Biological control

C. Use of fertilizers

D. Use of disease resistant varieties

Answer: D

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106. Who amongst the following received Nobel Prize in 1970 for his outstanding research contribution

A. Robert W. Holley

B. Waston and Crick

C. Norman E.Borlaug

D. Avary

Answer: C

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107. The technique involving insertion of a desired gene into the DNA of plasmid vector is know as

A. Dressing

B. Splicing

C. Cloning

D. Drafting

Answer: B

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108. The introduction of t-DNA into plants involves

A. Altering the pH of the soil, then heat shocking the plants

B. Exposing the plants to cold for a brief period

C. Allowing the plant roots to stand in water

D. Infection of the plant by Agrobacterium tumefaciens

Answer: D

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109. Some of the characteristic of Bt cotton are

A. High yield and resistance to bollworms

B. Long fibre and resistance to aphids

C. Medium yield, long fibre and resistance to beetle pests

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

Answer: A

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110. Abnormal gene is replaced by normal genes through

A. Gene therapy

B. Medicines

C. Cloning

D. Radiation

Answer: A

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111. Plants in comparison to animals are more rapidly manipulated by genetic

engineering.Select out the most probable reason for this

A. Totipotency shown by plant cells

B. Single somatic cells can regenerate a whole plant body

C. Genetic engineering is supplemented with plant tissue culture techniques

D. All of the above

Answer: D

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112. Micropropagation is a technique

A. Somatic embryogenesis for production of true type plants

B. For production of haploid plants

C. For production of somatic hybrids

D. For production of somaclonal plants

Answer: A

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113. Insect resistance transgenic cotton has been produced by insecting a piece by DNA from

A. An insect

B. A becterium

C. A wild relative of cotton

D. A virus

Answer: B

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114. Cryobiology deals with

A. Temperature effect

B. Physiology

C. Anatomy

D. Characteristics fo biomolecule

Answer: A

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115. Introduction of foreign genes for improving genotype is

Or

Insertion or deletion of one or more new genes which are absent in an organism by artificial method (not by reproduction) is called as

A. Biotechnology

B. Tissue culture

C. Vernalization

D. Genetic engineering

Answer: D

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116. In plant tissue culture, the callus tissues can be regenerated into complete plantlets primarily by altering the concentration of

A. Sugars

B. Vitamins

C. Amino acids

D. Hormones

Answer: D

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117. Hybrid vigour is mostly due to

A. Superiority of all the genes

B. Homozygosity of pure characters

C. Heterozygosity

D. None of these

Answer: C

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118. Plants are genetically engineered with novel genes by

A. Protoplast fusion

B. Recombinant DNA technology

C. Embryo rescue technique

D. Recombination breeding

Answer: B

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119. Two plants growing in different seasons and different geographical area, can produce hybrid by

A. Pollen culture

B. Tissue culture

C. Somatic embryogenesis

D. Invitro synthesis

Answer: B

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120. A human gene product can be produced by genetically engineered bacteria.This is possible because the

A. Genetic code is universal

B. Human chromosome can replicate in bacterial cell

C. Bacterial cell can carry out the splicing reaction

D. Mechanism of gene regulation is identical in humans and bacteria

Answer: A

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121. The genetically engineered crop which has been recently introduced in India is

A. Herbicide tolerant maize

B. Bt cotton

C. Slow ripening tomato

D. Goldent rice

Answer: B

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122. Cultivation of Bt Cotton has been much in the news . The prefix "Bt" means

A. Barium-treated cotton seeds

B. Bigger thread variety of cotton with better tensile strength

C. Production by "biotechnology" using restriction enzymes and ligases

D. Carrying an endotoxin gene from Bacillus thuringiensis

Answer: D

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123. Which of the following is a transgenic plant

A. Flavr savr

B. Ashbya gossypii

C. Meloidogyne incognita

D. Gluconobacter oxidans

Answer: A

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124. Widely used tool in genetic engineering of crop plants involves

A. Protoplast fusion

B. Agrobacterium mediation

C. Transposon mediation

D. Microinjection

Answer: B

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125. An improved variety of transgenic basmati rice

A. Gives high yield but has no characteristic aroma

B. Does not require chemical fertilizers and growth hormones

C. Gives high yield and is rich in vitamin A

D. Is completely resistant to all insect pests and diseases of paddy

Answer: C

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

A. Drought-resistance

B. Insect-resistance

C. Enhancing shelf life

D. Enhancing mineral content

Answer: B

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127. Salt tolerant transgenic has been developed for

A. Brinjal

B. Grape

C. Potato

D. Tomato

Answer: D

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128. The process of RNA interference has been used in the development of plants resistant to

A. Insects

B. Nematodes

C. Fungi

D. Viruses

Answer: B

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129. which one of the following is a case of wrong matching?

A. Somatic hybridization -Fusion of two diverse cells

B. Vector DNA- Site for t-RNA synthesis

C. Micropropagation -In vitro production of plants in large numbers

D. Callus-Unorganised mass of cells produced in tissue culture

Answer: B

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130. Totipotency is the basic principle of

A. Tissue culture

B. Sericulture

C. Pisciculture

D. Silviculture

Answer: A

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131. Sonalika and Kalyan Sona are varieties of

A. Wheat

B. Rice

C. Milet

D. Tobacco

Answer: A

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132. 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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133. 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 than the rate of viral multiplication

D. Viruses cannot multiply within meristem cells.

Answer: C

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134. 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 resistance rice variety

Answer: C

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135. Which one of the following combination would a sugarcane farmer look for in the sugarcane crop

A. Thick stem, long internodes , high sugar content and disease 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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136. Fungicides and antibiotics are chemical that

A. Enhance yield and disease resistance

B. Kill pathogenic fungi and bacteria, respectively

C. Kill all pathogenic microbes

D. Kill pathogenic bacteria and fungi respectively

Answer: B

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137. 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. Mutation breeding

D. Gene therapy

Answer: C

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138. 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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139. 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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140. 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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141. 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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142. The biggest constraint of plant breeding is

A. Availability of desirable gene in the crop and its wild relatives

B. Infrastucture

C. Trained manpower

D. Transfer of genes from unrelated sources

Answer: A

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143. 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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144. Micro-propagation is

A. Propagation of microbes in vitro

B. Propagation of plants in vitro

C. Propagation of cells in vitro

D. Growing plants on smaller scale

Answer: B

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145. Protoplast is

A. Another name for protoplasm

B. An animal cell

C. A plant cell without a cell wall

D. A plant cell

Answer: C

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146. To isolate protoplast, one needs

A. Pecitinase

B. Cellulase

C. Both pectinase and cellulase

D. Chitinase

Answer: C

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147. The agriculture sector of India employs about

A. 50 per cent of the population

B. 70 per cent of the population

C. 30 per cent of the population

D. 60 per cent of the population

Answer: D

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148. 33 percent of India's (Gross Domestics Product) comes from

A. Industry

B. Agriculture

C. Export

D. Small-scale cottage industries

Answer: B

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149. 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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150. Cellular totipotency is demonstrated by

A. Only gymnosperm cells

B. All plant cells

C. All eukaryotic cells

D. Only bacterial cells

Answer: B

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151. Genetic counsellors can identify heterozygous individuals by

A. Height of individuals

B. Colour of individuals

C. Screening procedures

D. All of these

Answer: C

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152. Hardening is tissue culture is

A. Keeping at $30 - 50^{\circ}$C temperature for about 30 minutes

B. Acclimatisation of tissue culture plants slowly before growing in the field

C. Plunging the vials into water at $37 - 40^{\circ} C$

D. None of the above

Answer: B

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153. In protoplast fusion which chemical is used

A. DMSO

B. Liquid N_2

C. Pectinase

D. PEG

Answer: D

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154. Vavilov's centres of origin of crop plants are located in

A. Mountains of tropical areas

B. Mountains of temperate areas

C. Mountains of both tropical and temperate areas

D. Plains of tropical areas

Answer: A

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155. 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 seed

B. The hybrid vigour is lost due to inbreeding depression

C. The government of India has accepted Dunkel's proposals

D. It is cheaper of purchase fresh seed

Answer: B

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156. Paresexual hybridization means

A. Fusion of male gamete with female gamete

B. Fusion of male gamete with synergid nucleus

C. Fusion of somatic protoplasts

D. Fusion of male gamete with protoplasts

Answer: C

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157. Genetic engineering is possible because

A. The phenomenon of transduction in bacteria is well understood

B. We can see DNA by electron microscope

C. We can cut DNA at specific sites by endonucleases like DNAase-I

D. Restriction endonucleases purified from bacteria can be used in vitro

Answer: D

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

A. Callus $\rightarrow$ Cell division $\rightarrow$ Explant $\rightarrow$ Addition of cytokinin $\rightarrow$ Acquire meristematic property

B. Explant $\rightarrow$ Callus $\rightarrow$ Cell division $\rightarrow$ Addition of cytokinin $\rightarrow$ Cells acquire meristematic property

C. Explant $\rightarrow$ Cell division $\rightarrow$ Callus $\rightarrow$ Addition of cytokinin $\rightarrow$ Cells acquire meristematic property

D. Callus $\rightarrow$ Explant $\rightarrow$ Cell division $\rightarrow$ Addition of cytokinin $\rightarrow$ Cells acquire meristematic property

Answer: C

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159. The shifting cultivation method called jhum belongs to the catogory of

A. Industrial forestry

B. Agro-forestry

C. Commercial forestry

D. Social forestry

Answer: B

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

A. Micropropagation

B. Somatic hybridization

C. Bio-fortification

D. Biomagnification

Answer: C

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161. Pollen tablets are available in the market for

A. Supplementing food

B. Ex situ conservation

C. In vitro fertilization

D. Breeding programmes

Answer: A

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162. Assertion : Haploids can be artificially produced.

Reason:Morphologically they are similar to diploids.

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

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

C. If assertion is true but reason is false.

D. If the assertion and reason both are false.

Answer: C

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163. Assertion : Hybridization is done between two genetically different types of plants.

Reason: Hybridization is intraspecific.

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

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

the assertion.

C. If assertion is true but reason is false.

D. If the assertion and reason both are false.

Answer: B

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164. Assertion:In case of vegetatively propagated crops, pure line selection is not required.

Reason:Hybrid vigour is mostly used in vegetatively propagated plants.

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

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

C. If assertion is true but reason is false.

D. If the assertion and reason both are false.

Answer: B

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165. Assertion:Aneuploidy may be of hypoploidy or hyperploidy type.

Reason:Monosomy lacks one pair of chromosomes.

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

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

C. If assertion is true but reason is false.

D. If the assertion and reason both are false.

Answer: C

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166. Assertion:Interspecific hybridization often falls to form normal embryos.

Reason:Such embryos can germinate in culture conditions.

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

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

C. If assertion is true but reason is false.

D. If the assertion and reason both are false.

Answer: B

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167. Study the following lists

List-I		List-II	
(A)	Usage of bisexual flowers as female parents	(I)	Clonal selection
(B)	Incorporation of several desirable characters into a single variety	(II)	Pure line selection
(C)	Exploiting hybrid vigour for many generation	(III)	Emasculation
(D)	Improving local varieties of self-pollinated crops	(IV)	Hybridization
		(V)	Polyploidy breeding

A. $\begin{matrix} A & B & C & D \\ IV & V & III & I \end{matrix}$

B. $\begin{matrix} A & B & C & D \\ II & III & IV & V \end{matrix}$

C. $\begin{matrix} A & B & C & D \\ III & IV & I & II \end{matrix}$

D. $\begin{matrix} A & B & C & D \\ I & V & II & IV \end{matrix}$

Answer: C

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168. Indian Sugarcane Breeding Research Institute was established

A. In Coimbatore of Tamil Nadu during 1912

B. In Coimbatore of Tamil Nadu during 1937

C. In Punjab Agricultural University, Ludhiana during 1912

D. In Punjab Agricultural University, Ludhiana during 1937

Answer: A

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169. As a general rule , inbreeding is possible between

A. Any two members of a order

B. Any two members of a family

C. Any two members of a genus

D. Any two members of a species

Answer: D

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170. Axenic culture is best defined as

A. Cell cultures

B. Cell cultures free from micro-organisms

C. Cell cultures of insectivorous plants

D. Cell cultures free from other micro-organisms

Answer: D

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171. For the formation of diploid cells from haploid cells, colchicine is used to

A. Stop the spindle fibres formation

B. Replicate DNA twicely in one cell cycle

C. Stop the formation of centromere

D. Stop of mitotic division

Answer: A

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172. The greatest threat to genetic diverstiy in agricultural crops is :

A. Extensive use of insecticides and pesticides

B. Extensive mixed cropping

C. Introduction of high yielding varieties

D. Extensive use of fertilizers

Answer: C

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173. Nucleic acid segment which is used to find the position of a gene and it forms a hybrid with this gene would be

A. Retrovirus

B. Probe

C. Vector

D. Clone

Answer: B

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174. Genetic engineering is possible because

A. Primase

B. Transcriptase

C. DNA ligase

D. Restriction endonuclease

Answer: D

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