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1. Which one of the following category of seeds is not being produced in India?
   (a) Nucleus seeds
   (b) Breeder seeds
   (c) Registered seeds
   (d) Foundation seeds

2. Which one of the following methods of plant breeding is not being. Used in cross-pollinated crops?
   (a) Mass selection
   (b) Recurrent selection
   (c) Pedigree selection
   (d) Back cross

3. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Segregation ratio)		**List II** (Type of gene interaction with which the given ratios are associated)
A.	9: 3: 4	1. Duplicate dominant epistasis
B.	12: 3: 1	2. Duplicate recessive epistasis
C.	13: 3	3. Dominant and recessive epistasis
D.	15: 1	4. Dominant epistasis
		5. Recessive epistasis

Code:

	A	**B**	**C**	**D**
(a)	1	3	4	2
(b)	1	4	3	2
(c)	5	4	3	1
(d)	5	3	4	1

4. Match List I with List II and select the correct answer using the code given below the Lists:

	List I (Expressions)		List II (Terminology)
A.	Alternative form of a gene which cannot in go together in the same gamete	1.	Allele
B.	A phenotype caused by which resembles a phenotype caused by a gene	2.	Phenocopy
C.	Crossing of F_1 with homozygous recessive parent	3.	Test cross
D.	Gene which has masking effect on another gene	4.	Epistatic gene

Code:

	A	**B**	**C**	**D**
(a)	1	2	3	4
(b)	1	3	2	4
(c)	4	2	3	1
(d)	4	3	2	1

5. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Events in meiosis)		**List II** (Different stages)
A.	Centromere divices	1. Anaphase II
B.	Random assortment of chromosome pairs occurs	2. Metaphase I
C.	Orientation of chromosomes at the equatorial plane	3. Anaphase I
D.	Crossing over occurs	4. Pachytene

Code:

	A	**B**	**C**	**D**
(a)	3	1	2	4
(b)	3	1	4	2
(c)	1	3	2	4
(d)	1	3	4	2

6. Consider the following statements:
   Hybrid seed production process involves
   1. Production of inbred lines.
   2. Selection of inbred lines.
   3. Production of F_1-seed.
   4. testing of combining ability.
   Select the correct sequence of above using the code given below;
   (a) 1, 2, 3, 4
   (b) 2, 1, 4, 3
   (c) 1, 2, 4, 3
   (d) 1, 4, 2, 3

7. Consider the following statements:
   In pedigree method of breeding
   1. Plant selection is continued till the progenies become homozygous.
   2. Plants are selected from F_2 onwards and their progenies are tested.
   3. It may be possible to study precise nature of inheritance of different characters by studying the pedigree records.
   Which of the statements given above are correct?
   (a) 1 and 2 only
   (b) 2 and 3 only
   (c) 2 and 3 only
   (d) 1, 2 and 3

8. Which one of the following is used as solvent in concrete extraction from jasmine flowers?
   (a) Ethanol
   (b) Methanol
   (c) Hexane
   (d) Glycerol

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9. In carrot, seed-to-seed method is preferred for production of
   (a) Nucleus seed
   (b) Foundation seed
   (c) Certified seed
   (d) Hybrid seed

10. Which one of the following hybrids of banana is popularly known as 'Gold Finger'?
   (a) FHIA-01
   (b) FHIA-26
   (c) PITA-18
   (d) BITA-3

11. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Horticulture Research Institute)		**List II** (Location)	
A.	CIPHET C VC	1.	Varanasi
B.	HHR	2.	Srinagar
C.	HVR	3.	Bengaluru
D.	CITH	4.	Ludhiana

Code:

	A	**B**	**C**	**D**
(a)	4	3	1	2
(b)	4	1	3	2
(c)	2	3	1	4
(d)	2	1	3	4

12. Sowing the rootstocks in the field and grafting on them in the field itself is known as
   (a) Field grafting
   (b) In-situ grafting
   (c) Veneer grafting
   (d) Approach grafting

13. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Crop)	**List II** (Variety)
A. Solanum viarum	1. Arka Upkar
B. Java citrnella	2. Nirmal
C. Catharanthus roseus	3. Auka Sanjeevin
D. Dioscorea floribunda	4. Manjusha

Code:

	A	**B**	**C**	**D**
(a)	1	2	4	3
(b)	1	4	2	3
(c)	3	4	2	1
(d)	3	2	4	1

14. Match List I with List II and select the correct answer using the code given below the Lists:
S

List I (Horticulture crop)		**List II** (Stage of Harvest)	
A.	Gerbera	1.	When all florets open
B.	Tuberose	2.	Fully opened flowers
C.	Dendrobium orchid	3.	When first pair of flowers in the spike is fully open
D.	Marigold	4.	when outer petals are fully expanded

Code:

	A	**B**	**C**	**D**
(a)	2	3	1	4
(b)	2	1	3	4
(c)	4	1	3	2
(d)	4	3	1	2

15. Crop yields are reduced in saline soils because
   (a) these soils do not allow easy movement of water through them
   (b) these soils have hard pan in the subsurface
   (c) these soils have crusty surface affecting germination
   (d) of high osmotic pressure of the soil solution around the roots

16. Consider the following statements:
In the Indian context, especially for the rice-wheat belt in the Indo-Gangetic Plain, the fertilizer application is not generally balanced with the imbalance being primarily due to
   1. Excessive application of P and N fertilizers.
   2. Excessive application of P and N, while inadequate application o K fertilizers.
   3. Inadequate application of K fertilizers.
   4. Excessive application of N and inadequate application o P fertilizers.

Which of the statements given above is/are correct?
   (a) 1 only (b) 3 and 4
   (c) 2 only (d) 4 only

17. Consider the following statements:
Sprinkler irrigation has advantages over surface irrigation in respect of
   1. Ensuring uniform application of water.
   2. Favouring greater permeability.
   3. Minimizing conveyance losses.
   4. Avoiding surface run-off.

Which of the statements given above are correct?
   (a) 1, 2 and 3
   (b) 1, 2 and 4
   (c) 2, 3 and 4
   (d) 1, 3 and 4

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18. Consider the following statements:
Proper tillage results in
1. increase in bulk density of soil.
2. increased depth of soil for moisture storage through higher infiltration.
3. reduced run-off.
4. impeded aeration in soil-plant system.
Which of the statements given above are correct?
(a) 1and 2
(b) 1, 3and 4
(c) 2 and 3 only
(d) 1 and 3 only

19. The sweet potato crop does well in soils which are
(a) Deep sandy loam
(b) Strongly acidic sandy clay
(c) Alkaline clayey sand
(d) Saline clay leam

20. With reference to salt-tolerance of crop plants, consider the following pairs;

Crop		Degree of salt-tolerance
1.	Potato	: Tolerant
2.	Maize	: Semi-tolerant
3.	Barley	: Sensitive

Which of the statements given above is/are correct?
(a) 1 only
(b) 2 and 3
(c) 2 only
(d) 1, 2 and 3

21. With reference to the nutrient management of crops, consider the following statements;
1. In crops in which the vegetative part is the economic yield, nitrogen supply must be stopped much before maturity.
2. In seed crops, the application of nitrogen may be during the seed development phase
Which of the statements given above is/are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

22. Consider the following soil classes under surface irrigation methods:
1. Sandy loam
2. Clay loam
3. Loam
4. Heavy clay
What is the correct sequence of the above regarding their irrigation efficiency in ascending order?
(a) 1 - 2 - 3 - 4
(b) 1 - 3 - 2 - 4
(c) 4 - 2 - 3 - 1
(d) 4 - 3 - 2 - 1

23. With reference to "Additive Series" type of intercropping system, consider the following statements:
1. The base crop is less than its recommended population in pure stand.
2. The population of intercrop is 100 per cent of its recommended population in its pure stand.
Which of the statements given above is/are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

24. Which one of the following hormones is responsible for cell division in plants?
(a) Cytokinin
(b) Abscisic acid
(c) Gibberellin
(d) Bassinolide

25. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Hormone)		**List II** (Precursors)	
A.	Auxin	1.	Methionine
B.	Gibberellin	2.	Purine/adenine
C.	Ethylene	3.	Tryptophan
D.	Cytokinin	4.	Mevalonic acid

Code:

	A	**B**	**C**	**D**
(a)	3	4	1	2
(b)	3	1	4	2
(c)	2	4	1	2
(d)	2	1	4	3

26. Which one of the following enzymes is activated by Zinc?
(a) Catalase
(b) Peroxidase
(c) Carbonic anhydrase
(d) Nitrate reductase

27. Which one of the following is the predominant sugar translocated in the phloem of most crop species?
(a) Glucose
(b) Fructose
(c) Maltose
(d) Sucrose

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28. Which one among the following cations is involved in stomatal regulation?
(a) Calcium
(b) Magnesium
(c) Manganese
(d) Potassium

29. Which one of the following fungicides can effectively destroy or inactivate internally seed borne inoculum?
(a) Mancozeb
(b) Thiram
(c) Zineb
(d) Metalaxyl

30. Consider the following statements:
1. Sclerospora graminicola is an obligate paresite.
2. Albugo candida is a facultative parasite.
Which of the statements given above is/are Correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

31. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Common Name)		**List II** (Zoological Name)
A.	Mango stem borer	1. Cryptorrynchus mangiferae
B.	Mango nut weevil	2. Dacus dorsalis
C.	Mango fruit fly	3. Batocera rufarnaculata
D.	Mango mealy bug	4. Drosicha mangiferae

Code:

	A	**B**	**C**	**D**
(a)	3	1	2	4
(b)	3	2	1	4
(c)	4	1	2	3
(d)	4	2	1	3

32. Consider the following statements:
1. Pheromones are secreted by the endocrine glands.
2. Sex pheromones are released by both male female insects.
Which of the statements given above is/are Correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

33. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Nematode)		**List II** (Scientific Name)
A.	Root-knot nematode	1. Heterodera rostochinensis
B.	Citrus nematode	2. Pratylenchussp.
C.	Cyst form nematode	3. Meloidogyne incognita
D.	Root-lesion nematode	4. Tylenchus semipenetrans

Code:

	A	**B**	**C**	**D**
(a)	2	4	1	3
(b)	2	1	4	3
(c)	3	4	1	2
(d)	3	1	4	2

34. According to Schofields ratio law, upon dilution of Na^+ concentration by 4 times, the absolute concentration of Ca + Mg must decrease by how many times so that ratio of the cations absorbed on the colloid surface of the soil remains unchanged?
(a) 4
(b) 8
(c) 12
(d) 16

35. At a particular point on a classical production function graph, the magnitudes of TPP, APP and MPP are 18, 6 and 7 respectively. What would be the E_p (Elasticity of production) at this point?
(a) 3
(b) 2.57
(c) 1.16
(d) 0.85

36. In which type of unemployment marginal productivity of labour is zero?
(a) Structural unemployment
(b) Disguised unemployment
(c) Seasonal unemployment
(d) Frictional unemployment

37. What do you call the price which ensures the same purchasing power per unit to the farmer as was prevalent during a specified base period?
(a) Minimum Support price
(b) Fixed Administered price
(c) Remunerative price
(d) Parity price

38. What is the cause for downward shift in the demand curve for an agricultural commodity?
(a) Fall in its price
(b) Rise in the price of substitute
(c) Fall in the price of complement
(d) Rise in the price of complement

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39. What was the development model used for the second Five year plan?
(a) Harrod-Domar model
(b) Mahalanobis model
(c) Tobin model
(d) Cobb-Douglas model

40. As a country progresses, the relative share of agriculture in the National Income is expected to
(a) Remain the same
(b) Increase
(c) Decrease
(d) Surpass industry

41. A main cause of year to year fluctuation in prices of agricultural commodity is
(a) Change in demand
(b) Long term trend in price
(c) Business cycle in agricultural production
(d) Change in supply due to weather related factors

42. Match List I with List II and select the correct answer using the code given below the Lists:

List I	**List II**
A. Principle of variable proportion	1. Substitution ratio of product = price ratio
B. Principle of combining enterprises	2. Iso-quant curve intersects with Iso-cost line
C. Opportunity cost principle	3. Marginal Revenue = Marginal cost
D. Principle of Factor substitution	4. Equi-marginal returns from the use of limited resources

Code:

	A	**B**	**C**	**D**
(a)	3	1	4	2
(b)	2	1	4	3
(c)	3	4	1	2
(d)	2	4	1	3

43. Producers are reduced to the level of absolute 'price takers' under which type of market?
(a) Perfectly competitive market
(b) Monopoly market
(c) Oligopoly market
(d) Duopoly market

44. A line or curve connecting the least cost combinations of inputs for different levels of output is referred to as
(a) Expansion path
(b) Isoquant
(c) Iso-cost line
(d) Ridge line

45. The economy in which allocation o f resources is dependent totally on the working of price mechanism is termed
(a) Planned
(b) Mixed economy
(c) Market economy
(d) Traditional economy

46. A rise in the price of one good causes fall in the demand for another good. These two are called as
(a) Identical goods
(b) Complementary goods
(c) Substitutes
(d) Giffen goods

47. A rise in the income of consumers causes a decrease in demand for a commodity. What are such goods called?
(a) Superior goods
(b) Inferior goods
(c) Normal goods
(d) Substitute goods

48. Under which cost concept rental value of owned land is included while working out minimum support prices for agricultural commodities by commission on Agricultural costs and prices?
(a) Cost A_1
(b) Cost B_1
(c) Cost B_2
(d) Cost C_3

49. Consider the following statements:
1. MPP is inversely related to MC.
2. MPP is always greater then APP.
3. When MPP increases, MC also increases.
4. Total Fixed Cost remains constant, as out put increases.

Which of the above statements correctly Indicate/indicates the relationship between production and costs?
(a) 1 and 2
(b) 3 only
(c) 2 and 4
(d) 1 and 4

50. Consider the following elements:
1. Aluminium
2. Iron
3. Oxygen
4. Silicon

In terms of their contents present in the Earth's crust in descending order, what is the sequence of the above elements?
(a) 2 - 4 - 3 -1
(b) 2 - 3 - 4 - 4
(c) 3 - 4 - 1 - 2
(d) 3 - 1 - 4 - 2

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51. The specific surface area of clay minerals in soil varies from one to another, especially for the following clay minerals:
1. Kaolinite
2. Montmorillonite
3. Illite
4. Vermiculite

In terms of specific surface area of the above clay minerals in soil, in descending order, what is the correct sequence?
(a) 4 - 2 - 3 - 1
(b) 1 - 3 - 2 - 4
(c) 4 - 3 - 2 - 1
(d) 1 - 2 - 3 - 4

52. What is the predominant mechanism of transport of Zn to plant roots?
(a) Mass flow
(b) Diffusion
(c) contact exchange
(d) Root interception

53. Which one of the following is the formula for calculating "percentage pore space"?
(a) $100 - \left(\frac{\text{Bulk density}}{\text{Particle density}} \times 100\right)$
(b) $\frac{\text{Bulk density}}{\text{Particle density}} \times 100$
(c) $100 - \left(\frac{\text{Particle density}}{\text{Bulk density}} \times 100\right)$
(d) $\frac{\text{Particle density}}{\text{Bulk density}} \times 100$

54. what is the sequence of textual classes of soils arranged in increasing order of coarseness?
(a) Loam, silt loam, sandy loam, loamy sand
(b) Silt loam, sandy loam, loamy sand, loam
(c) Silt loam, loam, sandy loam, loamy sand
(d) Loamy sand, loam, sandy loam, silt loam

55. Cation exchange capacity generally increases as the soil pH
(a) stabilizes
(b) increases
(c) decreases
(d) attains neutrality

56. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Soil moisture constant)		**List II** (pF value)	
A.	Capillary water	1.	Tension free
B.	Hygroscopic water	2.	0 to 2.5
C.	Ground water	3.	2.2 to 4.5
D.	Gravitational water	4.	4.5 to 7.0

Code:

	A	**B**	**C**	**D**
(a)	3	4	1	2
(b)	3	1	4	2
(c)	2	4	1	3
(d)	2	1	4	3

57. A major cause for formation of saline and sodic soils is
(a) Intensive use of the land
(b) Inadequate presence of gypsum in soil
(c) Inadequate presence of lime in soil
(d) Poor soil drainage (both surface and internal)

58. Consider the following statements:
1. A fine-textured acid soil requires much larger quantity of lime than does a sandy soil or a loamy soil with the same pH value.
2. One molecule of calcium oxide, magnesium oxide or calcium hydroxide neutralizes the same amount of acidity as does one molecule of calcium carbonate.

Which of the statements given above is/are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

59. The P-deficiency symptom visible on foliage of cereal crops is
(a) General yellowing of young leaves
(b) Development of reddish brown or purple colour on older leaves
(c) Marginal scorching of older leaves
(d) Interveinal chlorosis of young leaves

60. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Available Nutrient)		**List II** (Extractant)	
A.	Boron	1.	0.15% $CaCl_2$ solution
B.	Nijtrogen	2.	Hot water
C.	Sulphur	3.	Alkaline $KMnO_4$

Code:

	A	**B**	**C**
(a)	2	1	3
(b)	1	3	2
(c)	2	3	1
(d)	3	2	1

61. Which one among the following is a good indicator plant for K deficiency?
(a) Maize
(b) Cauliflower
(c) Potato
(d) Lettuce

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62. Consider the following:
1. Bacteria
2. Grain straw
3. Clover residues
4. Soil humus

What is the ascending order of C:N ratio in the above materials?
(a) 1 - 2 - 3 - 4
(b) 4 - 3 - 1 - 2
(c) 1 - 4 - 3 - 2
(d) 4 - 1 - 3 - 2

63. Consider the following statements:
The application of bulky organic manure to soil is advantageous because it
1. Increases C/N ratio of soil and thus favour mineralisation of organic nutrient pools.
2. Reduces phosphate fixation by soil.
3. Favours rapid release of nutrients from the incorporated organic pools.

Which of the statements given above is/are correct?
(a) 1 only
(b) 2 and 3 only
(c) 1, 2 and 3
(d) 2 only

64. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Nutrients)		**List II** (Polluting effect)
A.	Nitrate-N	1. Euteophication
B.	Nitrous oxide	2. Methemo-globinemia
C.	Nitrogen and Phosphorus	3. Ozone layer
D.	Cadmium as contaminant in zinc and phosphatic fertilizers	4. Heart and kindney diseases

Code:

	A	**B**	**C**	**D**
(a)	2	1	3	4
(b)	2	3	1	4
(c)	4	1	3	2
(d)	4	3	1	2

65. What is the commercial potash fertilizer preferred for tobacco crop?
(a) K_2SO_4
(b) KCl
(c) K_2CO_3
(d) $KMnO_4$

66. Consider the following:
1. Zinc sulphate monohydrate
2. Zinc phosphate
3. Zinc oxide
4. Zn-EDTA

Based on the content of Zn, what is the sequence of the above materials in descending order?
(a) 3 - 1 - 4 - 2
(b) 3 - 2 - 1 - 4
(c) 2 - 1 - 3 - 4
(d) 2 - 4 - 3 - 1

67. Consider the following statements:
1. Potassium is absorbed by plant as K^+ ions.
2. Potassium is essential to photo-synthesis to take place.
3. Potassium is involved in activation of enzymes important to energy utilization.

Which of the statement given above are correct?
(a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

68. Consider the following:
1. Ammonium Nitrate
2. Potassium Nitrate
3. Sodium Nitrate
4. Urea

What is the correct sequence of the above fertilizers in ascending order based on their salt index per unit of Nitrogen content?
(a) 4 - 1 - 2 - 3
(b) 4 - 2 - 1 - 3
(c) 3 - 2 - 4 - 1
(d) 3 - 2 - 1 - 4

69. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Name of the Scientist)		**List II** (Area of work)
A.	Jones	1. Law of homologous series in variation
B.	Tysdal	2. Poly-cross test
C.	Muller	3. Double cross maize hybrids
D.	Vavilov	4. X-ray induced mutations

Code:

	A	**B**	**C**	**D**
(a)	1	3	4	2
(b)	3	2	4	1
(c)	1	4	3	2
(d)	3	4	2	1

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70. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Crop)		List II (Centre of Origin)	
A.	Barley	1.	South America
B.	Potato	2.	Abyssynia
C.	Chick-pea	3.	China
D.	Soybean	4.	Mediterranean

Code:

	A	B	C	D
(a)	3	4	1	2
(b)	2	1	4	3
(c)	2	4	1	3
(d)	3	1	4	2

71. With reference to domestication of crop plants, consider the following statements:
1. Under the domestication the variability generated by spontaneous mutation, natural hybridization and polyploidy were selected by man to suit his needs.
2. The extent of genetic variability substantially increased due to selection.

Which of the statements given above is/are? correct?

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

72. Primula is an ideal example of heteromorphic sporophytic system of incompatibility, where two types of flowers, pin and thrum, are observed. The compatible mating is observed in the crosses of
(a) Pin × Pin flowers
(b) Thrum × Thrum flowers
(c) Pin × Thrum flowers or its reciprocals
(d) In all possible combinations

73. Plant breeders manipulate sterility and floral morphology to take advantage of hybrid vigour. Which of the basic methods listed below are utilized for this purpose?
1. Genetic male sterility
2. Self incompatibility
3. Induced mutation
4. Hybridization
5. Cytoplasrnjc male sterility

Select the correct answer using the code given below:

(a) 1, 2 and 4 only (b) 1, 2 and 5 only
(c) 3, 4 and 5 only (d) 1, 2, 3, 4 and 5

74. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Mechanism)		List II (Crop)	
A.	Cleistogamy	1.	Barley
B.	Chasmogamy	2.	Rice
C.	Protogyny	3.	Bajra
D.	Protandry	4.	Maize

Code:

	A	B	C	D
(a)	1	2	3	4
(b)	1	3	2	4
(c)	4	2	3	1
(d)	4	3	2	1

75. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Breeding Objective)		List II (Breeding Method)	
A.	Exploitation of variability present in farmers' varieties	1.	Backcross
B.	Creation of new variability	2.	Pedigree selection
C.	Isolation of new combinations of genes	3.	Pure line selection
D.	Correction of specific defect in an adapted variety	4.	Mutation
		5.	Polyploidy

Code:

	A	B	C	D
(a)	3	4	1	2
(b)	5	3	1	2
(c)	3	4	1	2
(d)	5	3	2	1

76. When both additive and non-additive gene-effects are important in the expression of a trait, the most appropriate selection scheme is
(a) Pure-line selection
(b) Mass selection
(c) Simple recurrent selection
(d) Reciprocal recurrent selection

77. With reference to self-incompatibility, consider the following statements:
1. Sporophytic system of self-incompatibility is governed by a single gene with multiple alleles.
2. The incompatibility reaction of pollen is governed by the genotype of the plant on which pollen is produced.
3. The 'S' alleles are responsible for sporophytic incompatibility.
4. Failure of pollen germination on stigma, slow pollen tube growth after pollination are some of the reasons for this self-incompatibility.

Which of the statements given above are correct?

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(a) 1, 2 and 3 only
(b) 2, 3 and 4 only
(c) 1 and 4 only
(d) 1, 2, 3 and 4

78. The outbreeding individuals suffer from inbreeding depression when subjected to close mating. In which of the following types of mating, the inbreeding depression will be acute?
(a) Genetic assortative mating
(b) Phenotypic assortative mating
(c) Genetic disassortative mating
(d) Phenotypic disaddortative mating

79. Single Seed Descent (SSD) is a modification of which one of the following methods of selection?
(a) Pure line
(b) Mass
(c) Bulk
(d) Recurrent

80. Commercial hybrid seed production in cotton in our country has been possible due to which one of the following reasons?
(a) Availability of male-sterile lines
(b) Pressure of self-incompatibility system
(c) Large-scale hand emasculation and pollination
(d) Entomophily of flowers

81. Consider the following statements regarding synthetic varieties:
1. Parental materials are always inbred lines.
2. Open pollinated materials are also used as parental lines.
3. There is no limit on the number of parental lines used.
4. Parental lines are always tested for their combining ability.
Which of the statements given above are correct?
(a) 1 and 2
(b) 2 and 4
(c) 1 and 4
(d) 3 and 4

82. Performance of a double-cross hybrid can be predicted by taking the average performance of
(a) The inbreds involved in making the double cross
(b) All the single crosses to be used in making the double cross
(c) The four non-parental single crosses obtained from the four inbreds
(d) All the single crosses produced from the four inbreds

83. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Name of the crop)		**List II** (Name of the hybrid variety)
A.	Pearl Millet (Bajra)	1. CSH-1
B.	Maize	2. Pusa RH-10
C.	Basmati Rice	3. HB-1
D.	Sorghum	4. Ganga-1

Code:

	A	**B**	**C**	**D**
(a)	1	2	4	3
(b)	3	4	2	1
(c)	1	4	2	3
(d)	3	2	4	1

84. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Crop)		**List II** (Varieties)
A.	Wheat	1. Bikaneri Narma
B.	Rice	2. Agrani
C.	Mustard	3. Swarna
D.	Cotton	4. HD-2687

Code:

	A	**B**	**C**	**D**
(a)	1	2	3	4
(b)	1	3	2	4
(c)	4	3	2	1
(d)	4	2	3	1

85. Consider the following statements:
The backcross method of breeding can be used for
1. Intervarietal transfer of simply inherited characters.
2. Intergeneric transfer of simply inherited characters.
Which of the statements given above is/are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

86. With reference to pure line selection in self-pollinated crops, consider the following statements:
1. Pure line selection is essentially based on the genotype of the plant.
2. it is effective only for heritable differences.
3. It is ineffective in creating new variations.
Which of the statements given above are correct?
(a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

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87. Consider the following plants:
1. Mussaenda corymbosa
2. Lonicera japonica
3. Lagerstoemia indica
4. Pyrostegia venusta

Which of the above are ornamental climbers?
(a) 1 and 2 only
(b) 2 and 4 only
(c) 1 and 3 only
(d) 1, 2, 3 and 4

88. Pragati is a highly yielding clone of
(a) Lemon grass
(b) Patchouli
(c) Citronella
(d) Palmarosa

89. From which one of the following parts of Mentha arvensis is the high quality oil containing menthol is obtained?
(a) Green leaves
(b) Dry leaves
(c) Fresh roots
(d) Semi dried foliage

90. Consider the following:
1. Lime
2. Leguminous crops
3. Papaya
4. Sapota

Which of the above inter-crops can be grown during early growing period in mango orchard?
(a) 1 and 2
(b) 3 and 4
(c) 1 and 4
(d) 2 and 3

91. Which one of the following varieties of rose is developed by CIMAP (Lucknow) for oil extraction?
(a) Noorjahan
(b) Raktagandha
(c) Dr. B. P. Pal
(d) Montezuma

92. 'Cordial' is prepared from the fruits of
(a) Mango
(b) Litchi
(c) Lime
(d) Bael

93. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Crop)		List II (Method of hybrid seed production)	
A.	Brinjal	1.	Genetic male sterility
B.	Chilli	2.	Self incompatibility
C.	Crcumber	3.	Functional male sterility
D.	Cabbage	4.	Gynoecy

Code:

	A	B	C	D
(a)	2	4	1	3
(b)	3	1	4	2
(c)	2	1	4	3
(d)	3	4	1	2

94. Resistant source for virus in papaya breeding is
(a) Carica monoica
(b) Carica candamarcensis
(c) Carica pentagona
(d) Carica microcarpa

95. Papaya cultivars 'Pusa Delicious' and 'Pusa Majesty' are
(a) Andromonoecious
(b) Gynodioecious
(c) Hermaphodite
(d) Dioecious

96. Vegetative parthenocarpy is seen in which one of the following pairs of fruits?
(a) Thompson seedless grape and seed-less guava
(b) Banana and Pineapple
(c) Papaya and Jackfruit
(d) Mango and Litchi

97. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Source)		List II (Derivative)	
A.	Centella asiatica	1.	Emotine
B.	Ammi majus	2.	Forskholin
C.	Ipecac	3.	Vellarine
D.	Medicinal coleus	4.	Xanthotoxin

Code:

	A	B	C	D
(a)	2	1	4	3
(b)	3	4	1	2
(c)	2	4	1	3
(d)	3	1	4	2

98. The sex form of watermelon is
(a) Monoecious
(b) Dioecious
(c) Hermaphrodite
(d) Andromonoecious

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99. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Common Name)		**List II** (Species)
A.	Brazilian guava	1. Psidium montanum
B.	Strawberry guava	2. Psidium friedrichsthalianum
C.	Costa Rican (or) China guava	3. Psidium guinense
D.	Mountain guava	4. Psidium catteianum

Code:

	A	**B**	**C**	**D**
(a)	1	2	4	3
(b)	1	4	2	3
(c)	3	4	2	1
(d)	3	2	4	1

100. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Root stock)		**List II** (fruit Crop)
A.	Malling-9	1. Sapota
B.	Salt creek	2. Mandarin
C.	Manilkara hexandra	3. Apple
D.	Citrange	4. Grapes

Code:

	A	**B**	**C**	**D**
(a)	3	1	4	2
(b)	2	4	1	3
(c)	2	1	4	3
(d)	3	4	1	2

101. Lancing is done is
(a) Banana
(b) Poppy
(c) Cinchona
(d) Cauliflower

102. Consider the following statements:
1. Pumpkin is self-pollinated.
2. Lettuce is cross-pollinated.
Which of the statements given above is/are correct?
(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

103. Consider the following statements:
1. Cauliflower is rabi crop.
2. Bitter gourd is a kharif crop.
Which of the statements given above is/are correct?
(a) 1 and only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

104. To which family does Jasmine belong?
(a) Orchidaceae (b) Tridaceae
(c) Nyctaginceae (d) Oleaceae

105. Peach yellow disease is caused by
(a) Nitrogen deficiency
(b) Plant viruses
(c) Phytoplasma
(d) Bacteria

106. Ripe fruit rot disease caused by Colletotrichum sp. can be seen in
(a) Banana (b) Chillies
(c) Mango (d) Tomato

107 Which one of the following pairs is correctly matched?
(a) Mango : Gall midge Green leafhopper, Bakanase
(b) Potato : Black scurf, Black wart, Black heart
(c) Rice : Tungro, Golden nematode, Orobanche sp.
(d) Sugarcane : Black tip, Malformation, Mealy bug

108. During a visit to rice fields, at the tillering stage, patchy, stunted growth was observed. Critical close observation revealed that the plants had poor tillering and growth. The lower leaves had rusty patches of different sizes and shapes and the younger leaves showed interveinal chlorosis. the disease was not increasing, indicating the syndrome is due to some nutritional disorder. Which one of the following may be the cause of the syndrome?
(a) Zinc deficiency
(b) Nitrogen deficiency
(c) Iron deficiency
(d) Iron toxicity

109. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Virus)		**List II** (Transmitted by)
A.	Cucumber green mottle mosaic virus	1. White fly
B.	Okra yellow-vein mosaic virus	2. Thrips
C.	Tomato spotted wilt virus	3. Aphids
D.	Pea seed borne mosaic virus	4. Seeds

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Code:

	A	B	C	D
(a)	4	2	1	3
(b)	4	1	2	3
(c)	3	2	1	4
(d)	3	1	2	4

110. Consider the following locusts:
1. Locustamigratoria
2. Patanga Succincta
3. Schistocerca gregaria

Which of the above are found in India?
(a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

111. Consider the following modes of bio-control of plant pathogens:
1. Mycoparasitism
2. Competition
3. Induction of systemic resistance

When Trichoderma spp are used, which of the above are involved?
(a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3 only

112. Which one of the following is pasteuria penetrans?
(a) A soil hyphomycete used in the bio-control of soil-borne fungal diseases
(b) A soil bacterium causing wilt disease in ornamental plants
(c) A bacterium, a bio-control agent against root know nematodes
(d) A fungus, a potential bio-control agent of Golden nematode of potato

113. Uncinula necator, the causative organism of powdery mildew of grape is parasitized by
(a) Trichoderma harzianum
(b) Ampelomyces quisqualis
(c) T. harzianum and Pseudomonas fluorescens
(d) T. Viride

114. Consider the following chemicals:
1. Dicofol
2. Carbaryl
3. Dimethoate

Which of the above are insecticides?
(a) 1 and 2 only
(b) 1 and 3 only
(c) 2 and 3 only
(d) 1, 2 and 3

115. Which one of the following pair sis not correctly matched?

	Group		Fungicide
(a)	Acylalanines	:	Metalaxyl
(b)	Aromatic compounds	:	Pentachloro-nitrobenzene
(c)	Benzimidazoles	:	Thiophanate methyl
(d)	Heterocyclic compounds	:	Propiconazole

116. Match List I with List II and select the correct answer using the code given below the Lists:

List I (Target Organism)	**List II** (Pesticides)
A. Molluscs	1. Metaldehyde
B. Nematodes	2. Methyl bromide
C. Rodents	3. Warfarin

Code:

	A	B	C
(a)	3	2	1
(b)	1	3	2
(c)	2	1	3
(d)	1	2	3

117. The primary source of inoculum for red rot of sugarcane is through which one of the following?
(a) Infected cane setts used for sowing
(b) Condia present in the soil
(c) Contaminated irrigation water
(d) Conidia produced on the midrib of leaves in standing crop

118. A grower purchased a packet of pesticide in the form of wettable powder having 50% a.i. (active ingredient) to spray his paddy crop. he is having high volume sprayer that would require 600 litres of spray solution for one hectare area. How much pesticide will be required for one hectare area if the recommended dose of pesticide is
(a) 60 g
(b) 600 g
(c) 1200 g
(d) 300 g

119. Which one of the following equipments can be most effectively used for spraying on Orchard tall grown crops?
(a) Sikar pump
(b) Heli sprayer
(c) Barrel pump
(d) Foot sprayer

120. Isoquants always slope to
(a) downward to the right
(b) upward to the right
(c) horizontal to X axis
(d) vertical and parallel to Y axis

End of Question Paper