STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION(PLANT BREEDING)

EXERCISE

- 1. Emasculation is achieved by-
 - (1) Removal of anther
 - (2) Removal of stigma
 - (3) Removal of entire organisms
 - (4) Removal of petals and sepals
- **2**. In crop improvement programme haploids are of great importance, because they -
 - (1) Grow better under adaverse conditions
 - (2) Are useful in studies for meiosis
 - (3) Require only about half the amount of chemical fertilisers compared to diploids.
 - (4) Give homozygous lines following diploidisation.
- 3. Cellular totipotency is demonstrated by :-
 - (1) Only gymnosperm cells
 - (2) All plant cells
 - (3) All eukaryotic cells
 - (4) Only bacterial cells
- **4.** Heterosis (Hybrid Vigor) desirable in vegetatively propagated plants, because :-
 - (1) Heterosis maintains longer duration
 - (2) These plants are easy to cultivate
 - (3) Vegetative reproduction help in fast multiplication
 - (4) It is due to homozygosity
- **5.** Somaclonal variations appears in
 - (1) Organism produced through somatic hybridization
 - (2) Plants growing in highly polluted conditions
 - (3) Apomictic plants
 - (4) Tissue culture raised plants
- **6.** Pomato is
 - (1) Somatic hybrid
- (2) Allopolyploid
- (3) Natural mutant
- (4) (1) and (2) both
- 7. Plant part, used for culture is called
 - (1) Scion
- (2) Stock
- (3) Explant
- (4) Callus
- **8.** Protoplast fusion causes :-
 - (1) Rapid growth of offspring
 - (2) Somatic hybridization
 - (3) Production of useful allopolyploid
 - (4) (2) & (3) both
- **9.** Virus free plant can be obtained through :-
 - (1) Grafting
 - (2) Callus culture
 - (3) Shoot tip culture
 - (4) Suspesion culture

- **10.** Which of the following hormone is used for shoot differentiation in callus?
 - (1) 2, 4-D
 - (2) Benzyl amino purine (BAP)
 - (3) Deformylase
 - (4) Gibberelic acid
- 11. Which of the following type of culture is used in some interspecific crosses, where endosperm of developing hybrid seed degenerates very early?
 - (1) Meristem culture
- (2) Shoot tip culture
- (3) Embryo culture
- (4) Anther culture
- **12.** What is the root of any breeding programme
 - (1) Mutation
- (2) Green revolution
- (3) Genetic variability
- (4) Genetic similarty
- **13**. Which tropical canes grown in south india had thicker stems and high sugar content but did not grow well in north India.
 - (1) Saccharum barberi
 - (2) Saccharum spontaneum
 - (3) Saccharum robustum
 - (4) Sacchrum officinarum
- **14.** "Pusa Komal" variety of cow pea, which developed by hybridisation and selection is mainly resistance for
 - (1) Powdery mildew
- (2) Yellow mosaic virus
- (3) Bacterial blight
- (4) White rust
- **15**. Read the statements carefully
 - (A) Wheat variety, Atlas 66 having a high protein content
 - (B) SCP is the Alternate sources of proteins for animal and human nutrition
 - (C) Plants developed by micropropagation will be genetically different to the original plant from which they were grown
 - (D) Semi-dwarf rice varieties were derived from IR-8 and Taichung Native-1

Find out the correct statements

- (1) A, B, C
- (2) C, D, A
- (3) B, C, D
- (4) A, B, D
- **16**. In which crop resistance to yellow mosaic virus were induced by mutation
 - (1) Mung bean
- (2) Cow pea
- (3) Wheat
- (4) Brassica
- **17**. Smooth leaved and nectar less cotton varieties do not attract which one of following pests
 - (1) Aphids
- (2) Jsssids
- (3) Boll worms
- (4) Shoot borer

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- The main steps of plant breeding programmes is **18**. given below
 - (A) Cross hybridisation among the selected parents
 - (B) Testing release and commericialisation of new cultivars
 - (C) Collection of variability
 - (D) Selection and testing of superior recombinants
 - (E) Evalution and selection of parents

Arrange above steps in a systemetic way

- $(1) E \rightarrow C \rightarrow A \rightarrow B \rightarrow D$ $(2) C \rightarrow E \rightarrow A \rightarrow B \rightarrow D$
- $(3) C \rightarrow E \rightarrow A \rightarrow D \rightarrow B$
- $(4) E \rightarrow C \rightarrow A \rightarrow D \rightarrow B$
- **19**. Nobel laureate Norman E. Borlaug developed semi dwarf variety of
 - (1) Wheat
- (2) Sugarcane
- (3) Mustered
- (4) Chilli
- **20**. IARI. New Delhi has released several vegetables crops that are rich in
 - (1) Vitamin
- (2) Hormone
- (3) Minerals
- (4) 1 & 3 both
- Which plant breeding step is very tedious and time-**21**.
 - (1) Selection and testing of superior recombinants
 - (2) Cross hybridisation among the selected parents
 - (3) Collection of variability
 - (4) Evaluation and selection of parents
- **22**. Consider the table given below

Crop	Variety	Insect pests
(A)	Pusa Gaurav	Aphids
Flat bean	(B)	Jassids
Okra	Pusa sawani	(C)
Which one of th	e following option	n, gives the correct

t fill ups for the respective blank (A to C)

	Α	В	С
(1)	Wheat	Pusa Shubhra	Boll worms
(2)	Brassica	Pusa Komal	Fruit borer
(3)	Wheat	Pusa Komal	Boll worms
(4)	Brassica	Pusa Sem 2	Short borer

Consider the following statements (A to C) each with **23**. one or two blanks

Statements

- (A) The capacity to generated a whole plant from any cell/explant is called (i)
- (B) Transfer of resistance genes is achieved by ____(ii)____ between the target and the source plant followed by (iii)
- (C) The rice varieties IR8 were developed in (i∨)

Options

- (1) (i) cell growth
 - (ii) Mutation
 - (iii) Selection
- (2) (ii) Sexual hybridisation
 - (iii) Selection
 - (iv) India
- (3) (iii) Selection
 - (iv) Phillippines
 - (i) Totipotency
- (4) (iv) India
 - (i) Totipotency
 - (ii) Somatic hybridisation
- 24. Which vegetable crop rich in vitamin C has released by IARI. New Delhi
 - (1) Spinch
- (2) Lablab
- (3) Mustard
- (4) Carrot
- 25. How many percent of the population of India get employes by agriculture
 - (1)82
- (2)62
- (3) 17
- (4)92
- 26. International Rice Research Institute (IRRI) is located
 - (1) Hyderabad (India)
 - (2) Manila (Philippines)
 - (3) New York (U.S.A.)
 - (4) Tokyo (Japan)
- **27**. Dwarf wheat was developed by firstly:
 - (1) M.S.Swaminathan
- (2) Vavilov
- (3) Borlaug
- (4) B.D. Singh
- 28. Tissue culture is beneficial for :-
 - (1) Micropropagation
 - (2) Production of disease free plants
 - (3) Androgenic haploid
 - (4) All the above

ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	1	4	2	1	4	4	3	4	3	2	3	3	4	3	4
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28		
Ans.	1	3	3	1	4	2	4	3	3	2	2	3	4		