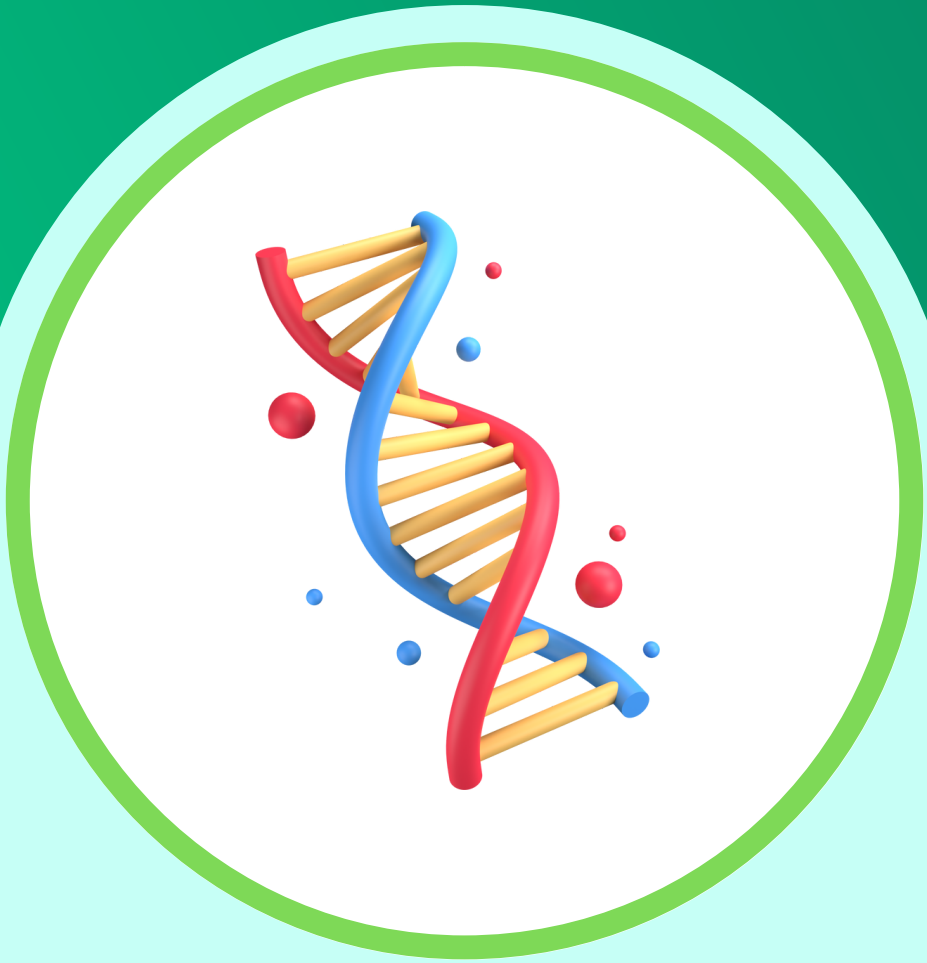
ALLEN CAREER INSTITUTE KOTA (RAJASTHAN)

path to success

PRE-MEDICAL

ZOOLOGY

ENTHUSIAST | LEADER | ACHIEVER



EXERCISE

Microbes in human welfare

ENGLISH MEDIUM

EXERCISE-I (Conceptual Questions) — Build Up Your Understanding

1. Hybrids plants developed by plant breeding are generally-
(1) Weaker than parent
(2) Superior than parent
(3) Like as parents
(4) Mutants

DP0001

2. Emasculation is achieved by-
(1) Removal of anther
(2) Removal of stigma
(3) Removal of entire organisms
(4) Removal of petals and sepals

DP0002

3. 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.

DP0003

4. A new crop triticale has been evolved by intergeneric hybridisation between-
(1) Wheat and Aegilops
(2) Wheat and rice
(3) Rice and Maize (4) Rye and wheat

DP0004

5. If a breeder has to evolve a disease resistant strain, what step will be taken first :-
(1) Hybridisation
(2) Selection of parents
(3) Working out the yield
(4) Looking for the subject in the library

DP0005

6. Cellular totipotency is demonstrated by :-
(1) Only gymnosperm cells
(2) All plant cells
(3) All eukaryotic cells
(4) Only bacterial cells

DP0006

7. Modern farmer's can increase the yield of paddy upto 50% by the use of :-
(1) Baculovirus
(2) *Rihizobium*
(3) Cyanobacteria
(4) Farm yard manure

DP0008

8. 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

DP0009

9. Pomato is –
(1) Somatic hybrid
(2) Allopolyploid
(3) Natural mutant
(4) (1) and (2) both

DP0010

10. Plant part, used for culture is called –
(1) Scion (2) Stock
(3) Explant (4) Callus

DP0011

11. Protoplast fusion causes :–
(1) Rapid growth of offspring
(2) Somatic hybridization
(3) Production of useful allopolyploid
(4) (2) & (3) both

DP0013

12. Virus free plant can be obtained through :–
(1) Grafting
(2) Callus culture
(3) Shoot tip culture
(4) Suspesion culture

DP0014

13. 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

DP0015

14. 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
DP0016

15. What is the root of any breeding programme
(1) Mutation (2) Green revolution
(3) Genetic variability (4) Genetic similarty
DP0017

16. 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
DP0018

17. "*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
DP0019

18. 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
DP0020

19. In which crop resistance to yellow mosaic virus were induced by mutation
(1) Mung bean (2) Cow pea
(3) Wheat (4) Brassica
DP0021

20. 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
DP0022

21. The main steps of plant breeding programmes is 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 → C → A → B → D
(2) C → E → A → B → D
(3) C → E → A → D → B
(4) E → C → A → D → B
DP0023

22. In fungi plant symbiotic association, the fungus symbiont absorb which nutrient from soil and passes it to the plants
(1) Nitrogen
(2) Phosphorus
(3) Magnese
(4) Calcium
DP0024

23. Nobel laureate Norman E. Borlaug developed semi dwarf variety of
(1) Wheat (2) Sugarcane
(3) Mustered (4) Chilli
DP0025

24. Which one of the following is an example of somatic hybridisation
(1) Bt cotton
(2) Pomato
(3) Golden rice
(4) All of these
DP0026

25. IARI, New Delhi has released several vegetables crops that are rich in
(1) Vitamin (2) Hormone
(3) Minerals (4) 1 & 3 both
DP0027

26. Consider the table given below

Crop	Variety	Insect pests
(A)	Pusa Gaurav	Aphids
Flat bean	(B)	Jassids
Okra	Pusa sawani	(C)

Which one of the following option, gives the correct fill ups for the respective blank (A to C)

	A	B	C
(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

DP0029

27. Which vegetable crop rich in vitamin C has released by IARI. New Delhi

(1) Spinch (2) Lablab
(3) Mustard (4) Carrot

DP0031

28. You are a plant breader. Which trait or character that you have firstly tried to incorporate into crop plants

(1) Increase crop yield and improved quality
(2) Increase tolerance to environmental stresses
(3) Increase resistance to pathogens
(4) Increase tolerance to insect pests

DP0032

29. How many percent of the population of India get employes by agriculture

(1) 82 (2) 62
(3) 17 (4) 92

DP0033

30. International Rice Research Institute (IRRI) is located at :

(1) Hyderabad (India)
(2) Manila (Philippines)
(3) New York (U.S.A.)
(4) Tokyo (Japan)

DP0034

31. Dwarf wheat was developed by firstly :

(1) M.S.Swaminathan (2) Vavilov
(3) Borlaug (4) B.D. Singh

DP0035

32. Why crossing with wild relatives is beneficial/because it helps in the transfer of gene of ?

(1) Disease resistance (2) Pest resistance
(3) Drought resistance (4) All the above

DP0036

33. Hybrid vigour is due to -

(1) Chiasma (2) Linkage
(3) Crossing over (4) Heterozygosity

DP0037

34. The process of transferring the cell–culture from old medium to fresh culture medium is known as:–

(1) Sterilization
(2) Subculturing
(3) Introduction
(4) Suspension culture

DP0039

35. Tissue culture is beneficial for :-

(1) Micropropagation
(2) Production of disease free plants
(3) Androgenic haploid
(4) All the above

DP0040

EXERCISE-I (Conceptual Questions) ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	**2**	**1**	**4**	**4**	**2**	**2**	**3**	**4**	**4**	**3**	**4**	**3**	**2**	**3**	**3**
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	**4**	**3**	**4**	**1**	**3**	**3**	**2**	**1**	**2**	**4**	**4**	**3**	**1**	**2**	**2**
Que.	31	32	33	34	35										
Ans.	**3**	**4**	**4**	**2**	**4**										

EXERCISE-II (Previous Year Questions)

AIPMT/NEET

AIPMT 2008

1. Crop plants grown in monoculture are
(1) Low in yield
(2) Free from intraspecific competition
(3) characterised by poor root system
(4) highly prone to pests

DP0041

2. In order to obtain virus-free plants through tissue culture the best method is :-
(1) Protoplast culture
(2) Embryo rescue
(3) Anther culture
(4) Meristem culture

DP0042

AIPMT 2007

3. Which one of the following statements is correct?
(1) At present it is not possible to grow maize without chemical fertilizers
(2) Extensive use of chemical fertilizers may lead to eutrophication of nearby water bodies
(3) Both *Azotobacter* and *Rhizobium* fix atmospheric nitrogen in root nodules of plants
(4) Cyanobacteria such as *Anabaena* and *Nostoc* are important mobilizers of phosphates and potassium for plant nutrition in soil

DP0043

AIPMT 2009

4. Somaclones are obtained by :-
(1) Genetic engineering
(2) Tissue culture
(3) Plant breeding
(4) Irradiation

DP0044

AIPMT 2010

5. Breeding of crops with high levels of minerals vitamin and proteins is called :
(1) Biomagnification
(2) Micropropagation
(3) Somatic hybridisation
(4) Biofortification

DP0045

AIPMT-Pre 2011

6. "Jaya" and "Ratna" developed for green revolution in India are the varieties of :-
(1) Maize (2) Rice
(3) Wheat (4) Bajra

DP0046

7. 'Himgiri' developed by hybridisation and selection for disease resistance against rust pathogens is a variety of :-
(1) Chilli
(2) Maize
(3) Sugarcane
(4) Wheat

DP0047

8. A collection of plants and seeds having diverse alleles of all the genes of a crop is called :-
(1) Herbarium
(2) Germplasm
(3) Gene library
(4) Genome

DP0048

AIPMT-Pre 2012

9. Which one of the following is a case of wrong matching ?
(1) Micropropagation-Invitro production of plants in large numbers
(2) Callus-Unorganised mass of cells produced in tissue culture
(3) Somatic hybridization - Fusion of two diverse cells
(4) Vector DNA- Site for t-RNA synthesis

DP0049

10. Which part would be most suitable for raising virus-free plants for micropropagation ?
(1) Meristem
(2) Node
(3) Bark
(4) Vascular tissue

DP0050

AIPMT-Mains 2012

11. Green revolution in India occurred during :
(1) 1980's (2) 1950's
(3) 1960's (4) 1970's

DP0051

NEET-UG 2013

12. In plant breeding programme, the entire collection (of plants/seeds) having all the diverse alleles for all genes in a given crop is called :
(1) germplasm collection
(2) selection of superior recombinants
(3) cross-hybridisation among the selected parents.
(4) evaluation and selection of parents

DP0052

AIPMT 2014

13. To obtain virus - free healthy plants from a diseased one by tissue culture technique, which part/parts of the diseased plant will be taken :-
(1) Apical meristem only
(2) Palisade parenchyma
(3) Both apical and axillary meristems
(4) Epidermis only

DP0053

AIPMT 2015

14. A technique of micropropagation is :-
(1) Somatic embryogenesis
(2) Protoplast fusion
(3) Embryo rescue
(4) Somatic hybridization

DP0054

15. Which of the following enhances or induces fusion of protoplasts ?
(1) Polyethylene glycol and sodium nitrate
(2) IAA and kinetin
(3) IAA and gibberellins
(4) Sodium chloride and potassium chloride

DP0055

Re-AIPMT 2015

16. A protoplast is a cell :
(1) without cell wall
(2) without plasma membrane
(3) without nucleus
(4) undergoing division

DP0056

NEET(UG) 2019 (Odisha)

17. In mung bean, resistance to yellow mosaic virus and powdery mildew were brought about by :
(1) Mutation breeding
(2) Biofortification
(3) Tissue culture
(4) Hybridization and selection

DP0083

NEET(UG) 2021

18. Match **List -I** with **List - II.**

List –I		List – II	
(a)	Protoplast fusion	(i)	Totipotency
(b)	Plant tissue culture	(ii)	Pomato
(c)	Meristem culture	(iii)	Somaclones
(d)	Micropropagation	(iv)	Virus free plants

Choose tho **correct** answer from the options given below.

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iii)	(iv)	(ii)	(i)
(2)	(ii)	(i)	(iv)	(iii)
(3)	(iii)	(iv)	(i)	(ii)
(4)	(iv)	(iii)	(ii)	(i)

DP0084

19. Which of the following is **not** an objective of Biofortification in crops?
(1) Improve protein content
(2) Improve resistance to diseases
(3) Improve vitamin content
(4) Improve micronutrient and mineral content

DP0085

NEET(UG) 2021 (Paper-2)

20. During the period 1960 to 2000, wheat production was increased due to the development of semi-dwarf varieties-of wheat, mainly due to the efforts of

(1) M.S. Swaminathan

(2) G.N. Ramaehandran

(3) Panchanan Maheshwari

(4) Norman E. Borlaug

DP0106

EXERCISE-II (Previous Year Questions) ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	**4**	**4**	**2**	**2**	**4**	**2**	**4**	**2**	**4**	**1**	**3**	**1**	**3**	**1**	**1**
Que.	16	17	18	19	20										
Ans.	**1**	**1**	**2**	**2**	**4**										

EXERCISE-III(A) NCERT BASED QUESTIONS

1. 'P-1542' is a hybrid variety of which plant ?
(1) Wheat (2) Rice (3) Maize (4) Pea
DP0086

2. "Jaya" and "Ratna" are better yielding semi dwart varieties of rice. These varieties are doveloped in which country ?
(1) Japan (2) India
(3) Phillipins (4) Mexico
DP0087

3. *Saccharum* barberry had poor sugar content and yield. This veriety of sugar cane mainly grown in which part of india ?
(1) South India (2) East India
(3) North India (4) West India
DP0088

4. The conventional method of breeding for disease resistance in plants is :
(1) Hybridisation (2) Selection
(3) Mutation (4) Both (1) and (2)
DP0089

5. Parbhani Kranti, which has resistance to yellow mosaic virus is a variety of :
(1) Wheat (2) Cow pea
(3) Bhindi (4) Chilli
DP0090

6. Production of thousands of plants through tissue culture method is called :
(1) Macropropagation
(2) Micropropagation
(3) Somatic embryo
(4) Totipotency
DP0091

7. Plants produced by tissue culture method are called:
(1) Explant
(2) Somaclones
(3) Micropropagation
(4) SCP (Single cell protein)
DP0092

8. Which chemical is used in somatic hybridisation ?
(1) Polyethyline glycol (2) Acredine
(3) HNO_2 (4) Ethenol
DP0093

9. Green revolution was dependent to a large extent on plant breeding techniques for development of
(1) High yielding varieties
(2) Disease resistant varieties
(3) Wild varieties
(4) Both 1 and 2
DP0094

10. Classical plant breeding involves
(1) Hybridisation of pure lines exclusively
(2) Hybridisation of pure lines followed by artificial selection
(3) Artificial selection exclusively
(4) Mutation breeding
DP095

EXERCISE-III(B) (ANALYTICAL QUESTIONS)

11. Which of the following is root of any plant breeding programme
(1) Genetic variability
(2) Evaluation and selection of parents
(3) Cross hybridisation among selectied parents
(4) Selection of superior recombinants
DP0096

12. Which of the following rice variety were developed in India
(1) IR - 8 (2) IR - 36 (3) TN - 1 (4) Jaya
DP0097

13. Match the following

A.	Himgiri variety	i. White rust
B.	Pusa swarnim	ii. Hill bunt
C.	Pusa shubhra	iii. Leaf curl
D.	Pusa sadabahar	iv. Black rot

	A	B	C	D
(1)	ii	i	iii	iv
(2)	i	ii	iv	iii
(3)	ii	i	iv	iii
(4)	i	ii	iii	iv

DP0098

14. About disease resistant varieties of plant select out the incorrect match
(1) Wheat – Himgiri
(2) Brassica – Pusa swarnim
(3) Cauliflower – Pusa shubhra
(4) Cowpea – Pusa snowball K1

DP0099

15. Parbhani kranti variety of *Ablemoschus esculentus* was created for resistance against which of the following disease
(1) Yellow mosaic virus
(2) Curl blight black rot
(3) White rust
(4) Powdery mildew

DP0100

16. Resistance to jassids in cotton and cereal leaf beetles in wheat is due to which of the following morphological / physiological / Biochemical characteristic
(1) Solid stem
(2) Nectorlessness
(3) High aspartic acid
(4) Hairy leaves

DP0101

17. Breeding crops with higher levels of vitamins and minerals, higher proteins and healthier fats is known as
(1) Bioremediation
(2) Biomagnification
(3) Biofortification
(4) Biotransformation

DP0102

18. Biofortified rice are enriched in which of the following nutrient
(1) Iron
(2) Amino acids
(3) Fatty acids
(4) Essential amino acids

DP0103

19. Match the following

A. Vitamin A rich		i	Lablab
B. Vitamin C rich		ii	Spinach
C. Fe and Ca Rich		iii	Bitter gaurd
D. Protein Rich		iv	Carrot

	A	B	C	D
(1)	iv	iii	ii	i
(2)	iv	iii	i	ii
(3)	iii	iv	ii	i
(4)	iii	iv	i	ii

DP0104

20. Each of the plant obtained through tissue culture are genetically identical to the original plant from which they were grown are known as
(1) Genocopies
(2) Somaclonal variants
(3) Somaclones
(4) Phenocopies

DP0105

EXERCISE-III ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ans.	4	2	3	4	3	2	2	1	4	2	1	4	3	4	1	4	3	1	1	3