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M.Sc. (First Semester)
EXAMINATION, Dec. - Jan., 2021-22
BOTANY
Paper Second
(Genetics)

Time : Three Hours] ***[Maximum Marks : 80***

[Maximum Pass Marks : 16

Note - Attempt all sections as directed

Section - A

(Multiple choice / Objective questions) **1×20=20**

Fill up the blanks -

1. Chromosome name was given by _____
2. The gene for colour blindness is located on _____
3. The ends of chromosomes are called _____
4. Chromatin is composed of _____
5. The last level of chromosome organisation is _____
6. The diagrammatic Presentation of morphology of chromosomes of a species in know as _____
7. Polyteen chromosomes are attached at _____

P.T.O.

8. Lamp brush chromosomes are observed in _____
9. The strength of linkage in dependent on _____
10. Number of Linkagc group of maize is _____
11. Triticum aestiuvm is a
    (A) Diploid (B) Triploid
    (C) Hexaploid (D) Haploid
12. When visual genome gets integrated in to bacterial genome it is known as
    (A) Episome (B) Temperate phage
    (C) Bacteria phage (D) Prophage
13. The process when only those bacterial genes adjacent to the prophage in the bacterial chromosome are tranduced is called
    (A) Restricted tranduction
    (B) Specialized tranduced
    (C) Generalized tranduction
    (D) Conjugation
14. Viruses which are used in tranduction
    (A) T_2 phage (B) λ phage
    (C) T_4 phage (D) T_7 phage
15. If he bacterial DNA Sequences is met # gal Bio in specialized tranduction which genes are tansferred
    (A) Met Bio (B) Met Gal
    (C) Met # Gal (D) Only Bio
16. DBS (Double standel path way is also known as DNA break)
    (A) Rec BCD (B) Rec BAD
    (C) Rec ABD (D) Rs DCB

17. Complete linkage is observed in
    (A) Mirabilis jalapa (B) Pisum sativm
    (C) Male Drosophilla (D) Maize
18. Progeny obtained by repeated self pollination are called
    (A) In breed (B) Pure line
    (C) Hetaosis (D) Pedigree line
19. From which of the following method new varieties of plants are produced
    (A) Mutation
    (B) Introduction and mutation
    (C) Selection and hybridization
    (D) Introduction
20. Which one of the following is method of hybridization?
    (A) Bagging (B) Tagging
    (C) Emasculation (D) All of the above

Section - B

(Very short answer type question) **2×8=16**

Note : Attempt all questions

Explain -

1. Centromere
2. Euchromatin and heterochromatin
3. Structure of bacteria phage
4. Temperate bacteriophage
5. Holliday Junction
6. Linkage group
7. Alien addition line
8. Example of inter specific hybridization

Section - C

(Short answer type question) **3×8=24**

Write about

1. Sex Chromosomes
2. Griffth experiment of transformation
3. Generalized and specialized transduction
4. Site specifc recombination
5. Genetic Markers
6. Intergenriz hybridization
7. Alien substitution lines
8. Polytene chromosomes

Section - D

(Long Answer type questions) **5×4=20**

1. Explain nucleosome model of chromosomes organisation

or

Describe structural changes in chromosoms

2. Describe transdution

or

Explain molecular basis of transformation

3. Explain - RTLP and snp markers

or

Describe the phenomenon of linkage

4. Explain the methods of detection of alien chromatin

or

Describe the porciess of whole genome transfer in Arachis