

Seat  
No.

**B.Sc. (Semester - III) (CBCS) Examination Oct/Nov-2019**  
**Entrepreneurship**  
**Microbial Biotechnology (Paper - V)**  
**GENETICS**

Day & Date: Friday, 11-10-2019  
 Time: 03:00 PM To 05:30 PM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.  
 2) Figures to the right indicate full marks.  
 3) Draw neat labeled diagrams wherever necessary.

**Q.1 Fill in the blanks by choosing correct alternatives given below.****14**

- 1) First generation after the cross is called \_\_\_\_\_.  
 a) First filial generation                      b) Second filial generation  
 c) F1 cross    d) F1 link
- 2) \_\_\_\_\_ acts as an intercalating agent.  
 a) Acridine orange                                      b) Ethidium Bromide  
 c) Proflavin    d) Alkalizing agents.
- 3) \_\_\_\_\_ is most likely to disrupt the normal linking pattern of genes.  
 a) Crossing over  
 b) Allergic response pattern in the cell membrane  
 c) Unlinking  
 d) Linkage
- 4) When \_\_\_\_\_ cross was made with F<sub>1</sub>, then 1:1:1:1:1:1:1:1 is obtained.  
 a) Back cross    b) Test cross  
 c) Two-way cross                                      d) Three-way cross
- 5) In heredity, the genes are obtained from \_\_\_\_\_.  
 a) Father    b) mother  
 c) Both    d) brother
- 6) Separation of chromosomes from centromere towards the end is known as \_\_\_\_\_.  
 a) Terminalization                                      b) Transcription  
 c) Translation    d) Transformation
- 7) Mendel did not propose \_\_\_\_\_.  
 a) Segregation    b) independent assortment  
 c) dominance    d) Incomplete dominance
- 8) \_\_\_\_\_ is the example of ABO blood type represents.  
 a) Complete dominance                                      b) Co-dominance  
 c) Blending    d) Incomplete dominance
- 9) The word chromosome was given by \_\_\_\_\_.  
 a) Bateson (1906)                                      b) Mendel (1909)  
 c) Waldeyer (1888)                                      d) Watson (1878)
- 10) Ultraviolet radiation causes DNA damage by formation of \_\_\_\_\_.  
 a) cytidine dimer    b) guanine dimer  
 c) adenine dimer    d) thymine dimer

- 11) \_\_\_\_\_ is condition if the child is born with an extra chromosome in each of its cells.
- a) Non-disjunction                                  b) Segregation  
c) Recombination                                      d) Translocation
- 12) Mendel performed experiments on \_\_\_\_\_.
- a) Pigeon Pea    b) Garden Pea  
c) Cow pea    d) Chick pea
- 13) Tautomerism is one of the causes of \_\_\_\_\_ mutation.
- a) Spontaneous    b) Induced  
c) Missense    d) Silent
- 14) \_\_\_\_\_ genotype represents a homozygous recessive condition.
- a) Bb    b) BC  
c) bb    d) bc

- Q.2 A) Answer the following questions. (Any Four) 08**
- 1) Define and Explain Null hypothesis.  
2) Fate of exogenote  
3) Genotypic ratio  
4) Factors affecting crossing over  
5) Spontaneous mutation
- B) Write short notes. (Any Two) 06**
- 1) Describe chi - square test with suitable example.  
2) Prove law of dominance with suitable example.  
3) Define Chromosome and Explain its types based on centromere.
- Q.3 A) Answer the following questions. (Any Two) 08**
- 1) Explain in detail transposable elements.  
2) What is crossing over? Explain in different theories of crossing over.  
3) Write a note on linkage and explain its types.
- B) Answer the following questions. (Any One) 06**
- 1) Explain modifications of Mendelian ratios with suitable example.  
2) Write a detail on Mendel's experiment.
- Q.4 A) Answer the following questions. (Any Two) 10**
- 1) Explain Complementary Epistasis.  
2) Write a detailed note on Recombination.  
3) Define mutation and add a note on mutagenic agents.
- B) Answer the following questions. (Any One) 04**
- 1) Describe process of transformation with suitable example.  
2) Explain types of chromosomal abbreviation.
- Q.5 Answer the following questions. (Any Two) 14**
- a) Define Linkage? Explain its significance.  
b) Explain Law of Independent assortment.  
c) Describe process of conjugation with suitable example.