

(9/10)

**KERALA AGRICULTURAL UNIVERSITY**  
B.sc (Hons) Ag 2015 Admission  
I<sup>st</sup> Semester Final Examination-February -2016

Cat. No: Pbg. 1102

Title:- Principles of Genetics and Cytogenetics (2+1)

Marks: 50.00

Time: 2 hours

**I Fill up the blanks**

(10 x 1=10)

1. In Inhibitory gene action, the F<sub>2</sub> ratio will be \_\_\_\_\_
2. The chromosome in which the centromere is located in the centre is called \_\_\_\_\_
3. DNA is defined by \_\_\_\_\_ as an acidic substance found in cell nuclei
4. The word "genetics" is coined by \_\_\_\_\_
5. Linkage was discovered by \_\_\_\_\_

**Match the following**

- |                   |                        |
|-------------------|------------------------|
| 6. Mitochondria   | a) Barbara MC CLINTOCK |
| 7. Genetic code   | b) Hermann J. Muller   |
| 8. Meiosis        | c) Carl Benda          |
| 9. Transposon     | d) Arthur Kornberg     |
| 10. Gene Mutation | e) H. Gobind Khorana   |
|                   | f) J.B. Farmer         |

**I Write short notes any Five questions**

(5 x 2=10)

1. Expressivity
2. Supplementary gene action
3. Transcription
4. Multiple factor hypothesis
5. Golgi body
6. Mendel's laws of inheritance
7. Translocation

**II Write short notes on any Five questions**

(5 x 4=20)

1. Summarize the steps involved in charging tRNAs with their appropriate amino acids
2. Define Lac operon. Mention the structural genes of lac operon and their function
3. Differentiate between qualitative and quantitative traits with examples
4. Differentiate between incomplete dominance and co-dominance
5. Differentiate between Karyotype and Idiogram
6. List the main differences between RNA and DNA
7. Differentiate between triploidy and trisomics

**Answer any ONE of the following**

(1 x 10=10)

1. Describe the various structural chromosomal aberrations with the help of a suitable diagrams
2. Explain briefly the origin of three tetraploid species of *Brassica* with the help of a suitable diagram