



KERALA AGRICULTURAL UNIVERSITY
B.Sc. (Hons.) Ag. 2017 Admission
I Semester Final Examination-February-2018

Pbgn.1101

Fundamentals of Genetics (2+1)

Marks: 50
Time: 2 hours
(10x1=10)

I Fill in the Blanks

- 1 A plant having one pair of chromosome less than the normal diploid chromosome is called a
- 2 The Pre-Mendelian concept of existence of a miniature organism in the sex cell is referred to as the theory of
- 3 A pictorial representation of the chromosome complement of an organism is called
- 4 The paired homologous chromosomes during prophase I is called.....
- 5 The phenomenon of exchange of segments of non sister chromatids during prophase I is called
- 6 The phenomenon of a single gene controlling more than one character is called as
- 7 The condensed X chromosome seen in the non dividing somatic cells of female mammals is called as
- 8is a plant species where chromosomal mechanism of sex determination is observed
- 9 A chromosome having centromere towards one end so that it has a very short arm and a very long arm is called.....chromosome
- 10 A set of three nucleotides on mRNA, that identifies a particular amino acid during translation is called.....

II Answer any FIVE of the following

(5x2=10)

Distinguish between ANY FIVE of the following with examples where applicable

- 1 Euploidy and aneuploidy
- 2 Sex limited and sex influenced traits
- 3 Pangenesis and preformation
- 4 Over dominance and codominance
- 5 Dominance and epistasis
- 6 Mitotic anaphase and meiotic anaphase I
- 7 Qualitative and quantitative traits

III Answer any FIVE of the following.

(5x4=20)

- 1 Describe the molecular model of DNA and explain its replication.
- 2 What is meant by genetic code and what are its major characteristics .
- 3 Explain the components and the process of translation.
- 4 Explain Prophase I of meiosis
- 5 Explain the methods of inducing mutations and their applications with examples.
- 6 Explain the different genetic disorders in human beings.
- 7 Explain the use of haploids and di haploids in genetics and crop improvement.

IV Write an essay on any ONE of the following

(1x10=10)

- 1 Write an essay on various numerical changes of chromosomes in plants indicating their spontaneous origin, artificial induction, effect on the organism and practical applications.
- 2 Write an essay on linkage, its significance, estimation, preparation of linkage map and various theories of crossing over.
