



KERALA AGRICULTURAL UNIVERSITY  
B.Sc (Hons.) Forestry 2016 Admission  
II Semester Final Examination-August-2017

Fbti.1204

Plant Cytology and Genetics (2+1)

Marks: 50  
Time: 2 hours

**I. Fill up the Blanks (10x1=10)**

- 1 ----- coined the term cell to describe the fundamental units of living organisms.
- 2 A plant having one chromosome more than the normal diploid chromosome is called as a -----
- 3 The pre-Mendelian concept of existence of a miniature organism in the sex cell is referred to as the theory of -----
- 4 During metaphase of mitosis the chromosomes are arranged at the -----
- 5 The phenomenon of exchange of segments of non sister chromatids during prophase I is called -----
- 6 Cultivated wheat (*Triticum aestivum*) is an example of this type of polyploidy -----
- 7 The process of synthesis of mRNA from the gene during protein synthesis is called -----
- 8 ----- is the enzyme required for synthesis of DNA during replication.
- 9 In a polypeptide chain, the amino acids are joined together by ----- bonds.
- 10 ----- is a very commonly used chemical mutagen.

**II Write short notes on any FIVE (5x2=10)**

- 1 Theory of Pangenesis
- 2 Karyotype and ideogram – their uses
- 3 Quantitative inheritance
- 4 Difference between DNA and RNA
- 5 Central dogma of life
- 6 Theories of crossing over
- 7 Incomplete dominance and codominance.

**III Answer any FIVE (5x4=20)**

- 1 Molecular model of DNA as proposed by Watson and Crick.
- 2 Different types of RNA in protein synthesis.
- 3 Replication of DNA
- 4 Different types of aneuploids and their significance.
- 5 Transcription – its initiation, continuation and termination.
- 6 Gametogenesis in plants
- 7 Solenoid model of Chromosome.

**IV Write essay on any ONE (1x10=10)**

- 1 Explain the different types of polyploids, their origin and significance with examples.
- 2 Spontaneous mutations origin and significance: induced mutations – methods and applications.

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