

B. Sc. Part-I

BOTANY

Paper-I (Cell biology, Genetics and Plant Breeding)

Multiple choice question

1. Ribosomes play an important role in synthesis of:
 - (a) Proteins
 - (b) Carbohydrates
 - (c) Lipid
 - (d) Nucleic acid
2. Which type of chromosome has only one arm.
 - (a) Acrocentric
 - (b) Sub metacentric
 - (c) Metacentric
 - (d) Telocentric
3. The functional unit of DNA is:
 - (a) Chromosome
 - (b) Gene
 - (c) Codon
 - (d) Nucleotide
4. In which plant transposable elements we reported for the first time?
 - (a) Maize
 - (b) Pisum
 - (c) Wheat
 - (d) Barley
5. Most commonly found DNA is:
 - (a) A-DNA
 - (b) Z-DNA
 - (c) B-DNA
 - (d) C-DNA
6. Central Dogma was proposed by-
 - (a) Benzer
 - (b) Crick
 - (c) Morgan
 - (d) Watson and Crick
7. What is the ploidy of bread wheat?
 - (a) Tetraploid
 - (b) Hexaploid
 - (c) Amphidiploid
 - (d) Diploid

8. Number of characters Mendel had selected for hybridization experiments were:

- (a) 2
- (b) 5
- (c) 9
- (d) 7

9. Smallest unit of plasmagene is:

- (a) Genome
- (b) Plasmon
- (c) Cytogene
- (d) Plastogene

10. Father of Green revolution is:

- (a) Dr. Swaminathan
- (b) Dr. Gurudev Khush
- (c) Norman E. Borlaug
- (d) William Guard

11. Who proposed fluid mosaic model of plasma membrane?

- (a) Perner & Muhlethaler
- (b) A. Novikoff
- (c) Robinson & Brown
- (d) Singer & Nicholson

12. Which one of the following term is not a part of nucleus:

- (a) Chromosome
- (b) Gene
- (c) Nucleolus
- (d) Ribosome

13. The centromere of chromosome is divided in which stage of meiotic division:

- (a) In Prophase stage
- (b) In Anaphase stage
- (c) In telophase stage
- (d) In Metaphase stage

14. In crossing a homozygous recessive with a heterozygote, what is the chance of getting an offspring with the homozygous recessive phenotype?

- (a) 75%
- (b) 25%
- (c) 50%
- (d) 100%

15. Kappa particles indicate

- (a) Nuclear inheritance
- (b) Mutation
- (c) Cytoplasmic inheritance
- (d) Nucleocytoplasmic inheritance

Short answer question

1. Write about the function of plasma membrane.
2. Write a short note on Lampbrush chromosomes.
3. Differentiate between mitosis and meiosis.
4. Why lysosomes are called as suicidal bags? Explain.
5. Write a short note on Griffith's experiments.
6. Write about translocation.
7. Describe the advantage of green revolution.
8. What do you understand by Law of segregation?
9. Write a short note on biparental inheritance.
10. Differentiate between pureline selection and mass selection.

Long answer question

1. Describe mitosis with the help of diagram.
2. Write an essay on the DNA model of Watson and Crick.
3. What do you understand by interactions of genes? Explain along with suitable examples the allelic and non-allelic interaction of genes.
4. With the help of diagrams explain the structure and function of endoplasmic reticulum.
5. Write about different types of hybridization methods used in self-pollinated crops.