

PARUL UNIVERSITY
COLLEGE OF AGRICULTURE
B.Sc.(Hons.) Agriculture Summer 2017 - 18 Examination

Semester: I
Subject Code: 20102101
Subject Name: Principles of Genetics

Date: 11/06/2018
Time: 10.30 am to 1.00 pm
Total Marks: 60

Instructions

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Do as Directed.**A. Fill in the blanks. (Each of 1.00 marks)****(10)**

1. The term Genetics was coin by_____.
2. Combine study of cytology and genetics is known as_____.
3. The Mendel's results were rediscovered by _____, _____ and_____.
4. The term mutation was coin by_____.
5. Stroma and grana are the parts of_____.
6. Nucleus was first discovered by_____.
7. DNA replication takes place during _____phase.
8. Meiosis leads to reduction in_____.
9. If the centromere is very near the end, the chromosome is _____.
10. The two ends of a chromosome are known as _____.

B. Multiple choice type questions. (Each of 1.00 mark)**(10)**

1. Theory of epigenesis was proposed by

a) Charles Darwin	c) Lamarck
b) Mendel	d) Bateson
2. The term lysosome was first used by

a) Poster(1948)	c) Camillo(1822)
b) Dave(1955)	d) Benda(1897)
3. Nucleus was first discovered by

a) Flemming(1822)	c) Robert Brown(1833)
b) Camillo Golgi(1832)	d) Benda(1897)
4. The daughter cells produced by meiosis are the different from mother cells in

a) Shape	c) Size
b) Chromosome number and composition	d) All of the above
5. In meiosis, synaptonemal complex develops during

a) Leptotene	c) Somatic mutation
b) Mutagens	d) Visible mutation
6. At anaphase a metacentric chromosome will assume

a) V shape	c) J shape
b) Rod shape	d) None of the above
7. Structural changes in chromosome cause alteration in

a) Phenotype	c) Fertility
b) Variability	d) All of the above
8. In a genome, each type of chromosome is represented

a) Only once	c) Twice
b) Thrice	d) Many times
9. Monoploids are represented by

a) x	c) 2x
b) n	d) 2n
10. Substitution of haploids are represented as

a) n+1	c) n-1+1
b) n-1	d) 2n

Q.2 Do as Directed.

A. Define the following. (Any five)

(05)

1. Genetics
2. Endoplasmic reticulum
3. Heterozygous
4. Transformation
5. Gene interaction
6. Deletion
7. Mitosis

B. Answer the following. (Any Five)

(05)

1. Describe briefly main feature of linkage.
2. Explain briefly the significance of mitosis.
3. Write function of nucleus.
4. Give the brief classification of chromosome based on position of Centromere.
5. Enlist different types of epistasis.
6. Enlist the factor which affecting crossing over.
7. What are the significance of crossing over?

Q.3 Write short notes. (Any five)

(15)

1. Explain polyploidy in detail.
2. Write difference between Plant cell and Animal cell
3. Write the characteristics of DNA double helix.
4. Explain the chloroplast in detail with appropriate figure.
5. Write difference between Mitosis and Meiosis
6. Write difference between Crossing over and Linkage.

Q.4 Attempt any Three/Long Questions/Example

(15)

1. Write difference between DNA and RNA
2. Explain cell cycle with labelled diagram.
3. Define epistatic interaction and explain dominant epistasis with example.
4. Enlist Mendel's law and explain law of independent assortment in detail.