

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

Semester: 3
Subject Code: 20102201
Subject Name: Principles of Plant Breeding

Date: 04/06/2018
Time: 2.00 pm to 4.30 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. Example of grafting method of propagation_____
2. Potato is a modified form of _____
3. Inter-specific crossing means, crossing between the _____
4. Example for root cutting method of propagation_____
5. Garlic is an example for_____
6. The word apomixes means_____
7. Production of embryo from an egg cell is called_____
8. Heterosis seen in _____generation.
9. Pomato is an example for_____type of crossing.
10. The presence of more than 2 genomes in the plants is called_____

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

1. Plant breeding is an

a) Art	c) Technology
b) Science	d) All of the above
2. Primitive type of germplasm

a) Obsolete varieties	c) Breeding lines
b) Land races	d) Wild forms
3. The presence of either male or female flower in a plant is called

a) Imperfect	c) Complete
b) Perfect	d) None
4. Pureline was proposed by

a) Dave	c) Johanson
b) Robert brown	d) Crick
5. Example for monoecious flower

a) Castor	c) Walnut
b) Maize	d) All of the above
6. Crossing of an inbred and open pollinated variety the resultant hybrid is called

a) Single cross	c) Top cross
b) Double cross	d) Double top cross
7. In GMS the male sterility is controlled by

a) Nucleus genes	c) Both
b) Cytoplasm genes	d) None
8. Pomato is a cross between

a) Beetroot and carrot	c) Potato and beetroot
b) Potato and tomato	d) Tomato and carrot
9. Sudden heritable changes in the plants are called

a) Heterosis	c) Mutation
b) Incompatibility	d) None
10. In often cross pollinated species the out crossing percentage is upto

a) 10%	c) 5-30%
b) 25%	d) 45%

Q.2 Do as Directed.

A. Define the following. (Any five)

(05)

1. Self pollination
2. Reproduction
3. Plant breeding
4. Parthenogenesis
5. Cleistogamy
6. Dicliny
7. Male sterility

B. Answer the following. (Any Five)

(05)

1. Self incompatibility
2. Heterosis
3. Inbreeding depression
4. Germplasm
5. Apomixis
6. Pureline
7. Distant hybridization

Q.3 Write short notes. (Any five)

(15)

1. Explain the types of male sterility.
2. Explain the types of apomixes.
3. How to estimate the heterosis over mid, better and commercial varieties.
4. Differentiate between the CMS and GMS.
5. Define mutation and mention its characteristics.
6. Explain pureline theory.

Q.4 Attempt any Three/Long Questions/Example

(15)

1. Explain the breeding objectives.
2. Define male sterility and explain its types and mention its use in the plant breeding programme.
3. Draw the complete flower structure and explain its floral parts briefly.
4. Define hybrid and explain different types of crosses involved in the production of hybrid.