

UNIVERSITY OF RUHUNA

BACHELOR OF SCIENCE (SPECIAL DEGREE) LEVEL I (SEMESTER II)
EXAMINATION – January 2018

SUBJECT: BOTANY

COURSE UNIT: BOT4172 (Techniques in Plant Breeding)

Time: 2 hours

Answer All questions

Index No:

Question No.	Marks
Q ₁	
Q ₂	
Q ₃	
Total	

1. Write short notes on,
- Hybrid vigour
 - Bulk Segregant analysis
 - Emasculation
 - Molecular markers

(80 marks)

2. i. What are the main objectives of plant breeding?
ii. Mention four different crop improvement methods in Plant Breeding.
iii. Briefly explain the Mass selection procedure and the advantages of it.
iv. Explain the effect of self-pollination on heterozygosity level in plant populations.

(100 marks)

3. i. What are the basic steps in micro propagation?
ii. Mention the importance of above method.
iii. A plant breeder found a high yielding rice variety (A) which lacks of flood resistance. He also found another rice variety (B) which is resistant to flood but lacks in all other good characteristics.
a. Name a suitable breeding method to incorporate flood resistance into above mentioned high yielding rice variety.
b. State the main steps of the breeding method you named above.

(100 marks)

4. i. What is male sterility?
ii. Explain the importance of male sterility in hybrid seed production.
iii. Briefly explain the Single seed descent method and the advantages of it.

(100 marks)