

UNIVERSITY OF RUHUNA

BACHELOR OF SCIENCE (GENERAL DEGREE) LEVEL III (SEMESTER II)
EXAMINATION –January 2018

SUBJECT: BOTANY

COURSE UNIT: BOT3282 (Plant Breeding)

Time: **One and half (1.5) hour**

Answer **three (03)** questions including question **No 1**

Index No:

Question No.	Marks
Q ₁	
Q ₂	
Q ₃	
Total	

1. Write short notes on,

- i. Emasculation
- ii. Main objectives of plant breeding
- iii. Hybrid vigour
- iv. Totipotency theory

(80 marks)

2. i. Mention four different crop improvement methods in Plant Breeding.
ii. Briefly explain the Mass selection procedure and the advantages of it.
iii. 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)