



**FIJI NATIONAL UNIVERSITY**  
**College of Agriculture, Fisheries & Forestry**  
**School of Agricultural Sciences**  
**Department of Genetics and Plant Breeding**  
**Bachelor of Agriculture- Year III**  
**Trimester I- Final Examination - 2017**  
**GPB702-Principles of Plant Breeding**

**Time Allowed: 3.00 hours plus (10 minutes reading time) Total Marks: 100**

**INSTRUCTIONS:**

1. This paper consists of **FIVE** pages including one page answer Sheet.
2. Please check to see that all your paper is complete.
3. Answer all the Objective Type Questions on the Answer Sheet and Descriptive Type Question in the Answer Booklet only.
4. **No** written or printed material and mobile phones are allowed in the examination hall
5. Marks allocated for each question appears at the side of each question so allocate your time accordingly.
6. This paper is divided into Two Parts. First Part contains Objective Type Questions which is having three Sections – A, B,C &D. All questions of this part are compulsory. The second part Descriptive type which contains three sections-E (Answer any Ten),F (Any Six)and G (Any two)

**I. OBJECTIVE TYPE QUESTIONS (20 Marks)**

**To be answered only on the Answer Sheet Provided.**

Section A	:	Choose the best answer.	(5Marks)
Section B	:	Fill in the blanks.	(5 Marks)
Section C	:	State True or False	(5 Marks)
Section D	:	One word terminology	(5 Marks)

**II. DESCRIPTIVE TYPE QUESTIONS (80 Marks)**

Section E	:	Definition	(20 Marks)
Section F	:	Short notes	(30 Marks)
Section G	:	Essay Question	(30 Marks)

**I, OBJECTIVE TYPE QUESTIONS****TOTAL MARKS: 20****A. Choose the best answer****(5 x 1= 5 Marks)**

- A1. Dee—geo—woo—gen is a rice variety belongs to the group  
(A) sativa (B) Japonica  
(C) Javanica (D) African
- A2. Dwarf stature in cereals is associated with  
(A) Lodging resistance (B) Fertilizer responsiveness  
(C) Increased tillering (D) All the above
- A3. The term nobilization is related to  
(A) Wheat (B) Rice  
(C) Sugar cane (D) Tobacco
- A4. \_\_\_\_\_ of the following which is not an ionizing radiation?  
(A) Alpha rays (B) Beta rays  
(C) Gamma rays (D) Ultra violet rays
- A5. Strawberry has modified stem and is called  
(A) Tuber (B) Sucker  
(C) Corm (D) Runner

**B. Fill in the blanks****(5 x 1= 5 Marks)**

- B1. \_\_\_\_\_ is an example for self pollinated crop
- B2. Double cross hybrids can be obtained by crossing two \_\_\_\_\_
- B3. LD 50 stands for \_\_\_\_\_
- B4. \_\_\_\_\_ is a physical mutagen
- B5. \_\_\_\_\_ breeding method that is useful to develop a variety for disease resistance.

**C. State True or False****(5 x 1= 5 Marks)**

- C1. The offspring of a single, heterozygous, self-pollinated crop is called as pure line.
- C2. The plants are selected on the basis of phenotypes is called as mass selection.
- C3. East and Shull proposed the pure line theory.
- C4. Standard heterosis is called as heterobeltiosis.
- C5. Kalyan sona is a mutant variety of wheat.

**D. Write down the correct one word terminology****(5 x 1= 5 Marks)**

- D1. The characters that show continuous variation.
- D2. Mutation occurs in somatic tissues.
- D3. The style and anthers are in different length resulting in cross pollination
- D4. Development of seeds from unfertilized ovule
- D5. A flower contains stamens but no pistil.

**II. DESCRIPTIVE TYPE QUESTIONS****TOTAL MARKS: 80****E. Write Definition of the following –Any ten****(10 x 2= 20 Marks)**

- E1. Plant Breeding
- E2. Germplasm
- E3. Herterobeltiosis
- E4. Dichogamy
- E5. Pollen Mother Cell
- E6. Chemical mutagens
- E7. Back cross breeding
- E8. Composite variety
- E9. Male sterility
- E10. In breeding depression
- E11. Variety
- E12. Breeder seed

**F. Write short notes on the following-Any Six****(6 x 5= 30 Marks)**

- F1. Aims and objectives of plant breeding
- F2. Name ten scientist with their contributions related to plant breeding
- F3. Breeding methods in self-pollinated crops
- F4. Define heterosis. Explain different types of heterosis.
- F5. Explain the back cross method to develop a disease resistant variety
- F6. Explain modes of reproduction in plants
- F7. Explain different types of breeding methods used in plant breeding

**G. Write an essay on the following (Any two)****(2 x 15= 30 Marks)**

- G1. Special breeding tools and techniques of plant breeding
- G2. Breeding methods in cross pollinated crops.
- G3. Calculate the better parent and standard heterosis of the following genotypes of tomato

SNo	Genotypes	RI	RII	RIII
1	L1	30.97	31.26	32.16
2	L2	19.25	18.26	19.21
3	L3	29.35	28.36	24.96
4	T1	36.41	29.98	32.56
5	T2	26.52	28.32	29.54
6	T3	29.20	21.32	26.51
7	L1xT1	35.62	35.89	37.56
8	L2XT2	36.12	26.25	25.12
9	L3XT3	24.32	21.26	22.38

**The End****XXXXXXXXXXXX**



Student I D No.....

Date: .....

Date: .....

Marks obtained: .....

Name: .....

Student I D No.: .....

**B. Sc. (Agriculture) Trimester-I, Final Examination-2017**

**Unit Code/Title: GPB 702-Principles of Plant Breeding**

**Objective Type Questions - Answer Sheet**

**Time: 30 Minutes**

**Total Marks: 20**

A.	A1.		
	A2.		
	A3.		
	A4.		
	A5.		
B.	B1		
	B2		
	B3		
	B4		
	B5		
C.	C1		
	C2		
	C3		
	C4		
	C5		
D	D1		
	D2		
	D3		
	D4		
	D5		

