



# FIJI NATIONAL UNIVERSITY

College of Agriculture, Fisheries & Forestry

Department of Genetics & Plant Breeding

Trade Diploma Agriculture- Year I

Trimester I, Final Examination - 2017

## GPB 401: Basics of Plant Breeding and Seed Production

**Time Allowed: 3.00 hours plus (10 minutes reading time) Total Marks: 75**

### INSTRUCTIONS:

1. This paper consists of five pages including two pages 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. The Answer sheet of the objective Type Questions will be collected **60 Minutes** after the start of Examination.
5. **No** written or printed material and mobile phones are allowed in the examination hall
6. Marks allocated for each question appears at the side of each question so allocate your time accordingly.
7. This paper is divided into Two Parts. First Part contains Objective Type Questions which is having three Sections – A, B & C. All questions of this part are compulsory. Second part is Descriptive Type which is having three sections D, E & F.

#### I. OBJECTIVE TYPE QUESTIONS (30 Marks) Time: 60 Minutes

**Note:** Answer only on the Answer Sheet and return 60 minutes after the start of Examination.

- |           |   |                         |            |
|-----------|---|-------------------------|------------|
| Section A | : | Choose the best answer. | (10 Marks) |
| Section B | : | Fill in the blanks.     | (10 Marks) |
| Section C | : | Match the following.    | (10 Marks) |

#### II. DESCRIPTIVE TYPE QUESTIONS (45 marks) Time: 2hr: 15 Minutes

There are **Six (6)** questions on Section D, you attempt only **Five (5)**, followed by Section E contain **Four (4)** questions, do attempt only **Three (3)**, and then in Section F **Three (3)** questions are given, do attempt only **two (2)** from it.

**Note:** Answer only on the Answer Booklet provided.

- |           |   |                      |            |
|-----------|---|----------------------|------------|
| Section D | : | Definitions          | (10 Marks) |
| Section E | : | Short Answer         | (15 Marks) |
| Section F | : | Descriptive Question | (20 Marks) |

**I. OBJECTIVE TYPE QUESTIONS***Note: To be answered only on the ANSWER SHEET provided with QUESTION PAPER.***A. FILL IN THE BLANKS.****(10x1= 10 Marks)**

1. \_\_\_\_\_ produce energy through chemical reactions.
2. A short maturing crop which is grown to generate income is called \_\_\_\_\_.
3. Roots develops from the \_\_\_\_\_ of the embryo.
4. *Solanum melongena* is also called as \_\_\_\_\_.
5. A \_\_\_\_\_ is an individual's collection of genes.
6. Chromosomes line up along centre of cell called the \_\_\_\_\_.
7. An organism with four sets of chromosomes is called \_\_\_\_\_.
8. \_\_\_\_\_ is the basic and cheapest agricultural input in crop production.
9. A \_\_\_\_\_ seed is one which is capable of germination under suitable conditions.
10. \_\_\_\_\_ is the process of removing seeds from the plant.

**B. CHOOSE THE BEST ANSWER.****(10x1= 10 Marks)**

11. \_\_\_\_\_ are the basic building blocks of life.
 

<i>a</i> Genes	<i>b</i> DNA
<i>c</i> Cells	<i>d</i> Protein
12. The most common plastid is \_\_\_\_\_.
 

<i>a</i> Protoplast	<i>b</i> Chromoplast
<i>c</i> Cytoplasm	<i>d</i> Chloroplast
13. \_\_\_\_\_ refers to plants with naked seed.
 

<i>a</i> Gymnosperms	<i>b</i> Angiosperms
<i>c</i> Ribosome	<i>d</i> None of the above
14. True fruit are the fruit develops only from \_\_\_\_\_.
 

<i>a</i> Pedicel	<i>b</i> Peduncle
<i>c</i> Ovary	<i>d</i> Thalamus
15. Rice belongs to \_\_\_\_\_ family.
 

<i>a</i> Mustard	<i>b</i> Gourd
<i>c</i> Squash	<i>d</i> Grass
16. \_\_\_\_\_ is one of two or more versions of a gene.
 

<i>a</i> Allele	<i>b</i> Heterozygous
<i>c</i> Homozygous	<i>d</i> Genotypes
17. \_\_\_\_\_ is the process in which the DNA of the cell's split into two equal sets of chromosomes.
 

<i>a</i> Meiosis	<i>b</i> Mitosis
<i>c</i> Cytokinesis	<i>d</i> Oogenesis
18. \_\_\_\_\_ is the father Genetics.
 

<i>a</i> George Paul Berg	<i>b</i> Gottleib Haberlandt
<i>c</i> Gregor J. Mendel	<i>d</i> None of the above
19. \_\_\_\_\_ is the hundred percent genetically pure seed.
 

<i>a</i> Certified seed	<i>b</i> Breeder seed
<i>c</i> Foundation seed	<i>d</i> Nuclear seed
20. The reduction of seed moisture content to the recommended levels is called \_\_\_\_\_.
 

<i>a</i> Seed Threshing	<i>b</i> Seed drying
<i>c</i> Seed Depulping	<i>d</i> Seed Tumbling

## C. MATCH THE FOLLOWING:

(10x1 =10 Marks)

## PART - A

## PART-B

- |                     |                            |
|---------------------|----------------------------|
| 21. Oats            | A. Biotechnology           |
| 22. Tubers          | B. Glycine max             |
| 23. Prokaryotes     | C. Clear-cut Policy        |
| 24. Primordia       | D. Contamination in seeds  |
| 25. Genes           | E. Healthiest grains       |
| 26. Spermatogenesis | F. Matures to leaf.        |
| 27. Mutation        | G. Meiosis in male         |
| 28. Genetic purity  | H. No nucleus              |
| 29. Soybean         | I. Parents to offspring    |
| 30. Seed marketing  | J. Change in Genes         |
|                     | K. Serve as storage vessel |

## II. DESCRIPTIVE TYPE QUESTIONS

*Note: To be answered only on the ANSWER BOOKLET provided.*D. DEFINITIONS/NOTES - Attempt Any Five Questions (3-4 lines)*Each question carries TWO marks*

(5 x 2 = 10 Marks)

- |                          |                                 |
|--------------------------|---------------------------------|
| 31. Plant breeding       | 34. Angiosperms and Gymnosperms |
| 32. Eidonomy and Anatomy | 35. Homozygous & Heterozygous   |
| 33. Mutation             | 36. Seed Viability and Vigor    |

E. SHORT ANSWER - Attempt Any Three Questions (150-200 words).*Each question carries Five marks*

(3 x 5 = 15 Marks)

37. Briefly explain the general morphology of stem.
38. Briefly explain three laws of Mendelian inheritance.
39. Briefly explain what are the factors affecting the deterioration of crop varieties.
40. Briefly explain, what are the different classes of seeds and its production?

F. DESCRIBE THE FOLLOWING - Attempt Any Two Questions (350-400 words).*Each question carries TEN marks*

(2 x 10 = 20 Marks)

41. Explain the functions of any 6 cell organelles with suitable diagram.
42. Explain the cell division mitosis with suitable diagrams.
43. Explain the principle, procedure and process of seed packaging and storage.

**The End**

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Date: .....

Marks obtained: .....

**Trade Diploma Agriculture Trimester-I, Final Examination-2017**

**GPB 401 – Basics of Plant Breeding and Seed Production**

**I. Objective Type Questions - Answer Sheet**

Time: 60 Minutes

Total Marks: 30

A.	1.		
	2.		
	3.		
	4.		
	5.		
	6.		
	7.		
	8.		
	9.		
	10.		
B.	11.		
	12.		
	13.		
	14.		
	15.		
	16.		
	17.		
	18.		
	19.		
	20.		
C.	21.		
	22.		
	23.		
	24.		
	25.		
	26.		
	27.		
	28.		
	29.		
	30.		

XXXXXXXXXXXXX

