



FIJI NATIONAL UNIVERSITY

COLLEGE OF AGRICULTURE, FISHERIES AND FORESTRY

B. Sc. (Ag.) Third Year First Trimester Final Examinations – 2016

Course No. & Title: PPA 601: Plant Disease and their Management

Time Allowed: 3.00 hours plus (10 minutes reading time)

Total Marks: 50

INSTRUCTIONS:

1. This paper consists of six pages including one 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 Questions 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 having two parts. The first contains Objective Type Questions which is having Three Sections – A, B and C. The second part contains Descriptive Type Questions.

I. OBJECTIVE QUESTIONS

(30 Marks)

To be answered only on the Answer sheet.

Section A: Fill in the blanks.

(20 Marks)

Section B: True or False Questions.

(5 Marks)

Section C: Matching Questions.

(5 Marks)

II. DESCRIPTIVE TYPE QUESTIONS

(20 Marks)

There is one part in descriptive type questions. It is compulsory to attempt all questions. Write your answer on the answer booklet. Answer every question from a new page to facilitate evaluation.

Note: Answer only on the Answer Sheet and return 60 minutes after the start of Examination. Students note copying is prohibited in the test at any time and will lead to the complete loss of marks.

Name:

Student ID No. :

A. Short answers and Fill in the blanks.

(10 × 2 = 20 Marks)

1. Explain well the concept of Koch's postulates?

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2. Describe the techniques used in our practical class for the first isolation of plant pathogens from disease samples collected from the field.

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3. Based on the SOP (Standard) used for the preparation of Potato Glucose Agar (PGA) in the practical class. Carry out the working if you want to prepare 1.8 liters of PGA based on the standard. How much of the following will you need:

Peeled Potatoes: SOP – 400grams/ 1 ltr

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Glucose: SOP – 15grams/ 1 ltr

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Agar: SOP - 20grams/ 1ltr

Name:

Student ID No. :

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4. Name the exotic sugarcane disease that affects all the sugarcane growing countries in the world except for Fiji and PNG.

Common Name of disease:.....

Scientific Name of causal pathogen:.....

Type of pathogen:.....

5. Name the two endemic banana diseases that badly affect bananas widely their scientific names and what type of pathogen is it?

A) Common Name of disease:.....

B) Scientific Name of causal pathogen:.....

C) Type of pathogen:.....

D) Common Name of disease:.....

E) Scientific Name of causal pathogen:.....

F) Type of pathogen:.....

6. Plant diseases can be induced by pathogenic (biotic) factors. Name any four biotic factors that induce disease:

1..... 2.....

3..... 4.....

Name:

Student ID No. :

7. Name the particular exotic fungal disease and pathogen that affects sugarcane and is present in all sugarcane growing countries but is absent only in Fiji and PNG.

Common Name of disease:.....

Scientific Name of causal pathogen:.....

8. Name the particular exotic bacterial disease that affects cassava and its present in the South African Region.

Common Name of disease:.....

Scientific Name of causal pathogen:.....

9. Describe the sterilization process of Potato Glucose Agar (PGA) in an autoclave.

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10. Explain what an exotic disease is and give two examples of an exotic disease.

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B. Match the following: (Write the correct letters on the empty column next to the number column) (10 x 0.5 = 5 Marks)

11.		Pigeon Pea	A.	<i>Sacahrum endule</i>
12.		Pineapple	B.	<i>Solanum melongena</i>
13.		Wheat	C.	<i>Cajanus cajan</i>
14.		Sugarcane	D.	<i>Curcuma longa</i>
15.		Eggplant	E.	<i>Musa acuminata</i>
16.		Cassava	F.	<i>Abelmoschus esculentus</i>
17.		Tumeric	G.	<i>Triticum aestivum</i> L.
18.		Duruka	H.	<i>Saccharum officinarum</i>
19.		Okra	I.	<i>Manihot esculenta</i>
20.		Banana	J.	<i>Ananas comosus</i>

C. Write 'True' or 'False'. (10 x 0.5 = 5 Marks)

21.	Pigeon pea & Chick pea belongs to the perennial shrubs in the family Fabaceae.	
22.	The causal pathogen that causes the disease Heat rot in pineapples is called <i>Fusarium oxysporum f.sp. Cubense</i> .	
23.	Papaya belongs to the family Vitaceae.	
24.	Moko disease is an exotic disease for bananas in Fiji.	
25.	The various Cassava varieties belong to the family Araceae and it's widely grown in Fiji.	
26.	The <i>Pseudomonas solanacearum</i> is the fungal causal pathogen causing premature leaf and fruit loss in okra plants.	
27.	Powdery mildew in papaya is caused by the pathogen <i>Erysiphe necator</i> .	
28.	Papaya Ring Spot Virus is an endemic disease of concern in Fiji thus we need to take precaution when importing papaya seeds for propagation.	
29.	Pineapple belongs to family <i>Bromeliaceae</i> .	
30.	Mulberry belongs to the family Musaceae.	

D. Essay Questions.**(2 questions totaling = 20 Marks)**

1. Draw and describe the techniques used in the practical class on single spore isolation under the three headings- (10 marks)
 - a) Preparation of 400ml Water Agar (SOP 20grams Agar/ 1 ltr Distilled water) :
 - b) Preparation of the Spore suspension Dilution under the 1/10, 1/100 & 1/1000:
 - c) Inoculation of the Spore dilution under the 1/10, 1/100 % 1/1000.

2. Describe and explain the complete practical on Koch's postulates work carried on chili disease. The common name of the disease on chilies and the scientific name of the causal pathogen. List 2 names of the fungicide chemicals used to control this chili disease. Also list 2 crop host that is also affected by this pathogen? (10 marks)

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