



# **MASENO UNIVERSITY**

## **UNIVERSITY EXAMINATIONS 2012/2013**

**SECOND YEAR SECOND SEMESTER EXAMINATION  
FOR THE DEGREE OF BACHELOR OF SCIENCE IN  
HORTICULTURE WITH INFORMATION TECHNOLOGY  
(MAIN CAMPUS)**

**SHC 209: PRINCIPLES OF PLANT PATHOLOGY**

*Date: 18<sup>th</sup> July, 2013*

*Time: 8.30 – 10.30 a.m.*

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## SHC 209: PRICIPLES OF PLANT PATHOLOGY

### **INSTRUCTIONS:**

*ANSWER ALL QUESTIONS IN SECTION A AND ANY TWO QUESTIONS FROM SECTION B*

### **SECTION A (30 marks ) Answer all questions from this section**

1. Agrios (2005) classifies plant diseases into two classes. What are the two classifications and give at least 5 causal agents for each class? (5 marks)
2. Why does a facultative plant pathogen have a survival advantage over an obligate pathogen? (2 marks)
3. State the key ways in which plant pathogens can penetrate the plant cell cuticle (3 marks)
4. Would it be easier to breed for resistance to a host-specific toxin or for a non-host- specific toxin? Give reasons for your answer. (5 marks)
5. What is the difference between an elicitor and a phytoalexin within the context of plant disease physiology? (3 marks)
6. How is nitrogen important in plant disease development? (3 marks)
7. What is the most important abiotic disease? Give reason why.(2 marks)
8. Outline the effects of temperature, as an environmental component, on the exacerbation or amelioration of disease (2 marks)

9. Rank, in order, the most satisfactory general methods of Plant disease control (2 marks)

10.State, in chronological order, the kinds of events involved in progression of the plant disease cycle (3 marks)

**SECTION B (40 Marks):**

Answer any **TWO** questions from this section (20 marks each)

1. Explain, to someone unfamiliar with modern biology, the relationship between plant wellness and death using plant disease related illustrations in your explanation. (20 marks)
2. Describe horizontal and Vertical Resistance highlighting the advantages and disadvantages of each on annual and perennial crops and specifying, with elaborately explained details, which you would use to manage a named disease of roses. (20 marks)
3. Elicitors are thought to be intimately involved with the host's phytoalexin defense response mechanism. Discuss, in general, the mechanism(s) for the production of a phytoalexin. (20 marks)