UNIVERSITY OF EMBU

2016/2017 ACADEMIC YEAR

SECOND SEMESTER EXAMINATION

FOURTH YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE AND BACHELOR OF SCIENCE IN HORTICULTURE

ACP 402: DIAGNOSTICS OF CROP DISEASES

DATE: APRIL 13, 2017 **TIME: 2:00-4:00PM**

INSTRUCTIONS:

Answer Question ONE and ANY other TWO Questions

QUESTION ONE

a) State any three direct secondary losses caused by plant diseases (3 Marks)

b) Differentiate between the general patterns of disease symptoms caused biotic agents from patterns of symptoms caused by abiotic agents (2 Marks)

c) Outline any six symptoms produced by above ground feeding nematodes (3 Marks)

d) Name the two critical tools required in plant disease diagnosis (2 Marks)

e) Describe decline as a plant disease symptom and name one possible cause (2 Marks)

f) Describe how you would go about incubating symptomatic plant material to induce fungal sporulation (5 Marks)

g) What is the purpose of ultracentrifugation during virus purification (2 Marks)

h) Briefly describe how samples meant for diagnosis should be preserved (4 Marks)

i) Differentiate disease severity from disease incidence (3 Marks)

j) Describe how you would carry out field diagnosis of bacterial wilt of potato (4 Marks)

QUESTION TWO

a) Describe the methods that are used to diagnose plant viruses (10 Marks)

b) Discuss the process of reviewing cultural practices and growing environment during plant disease diagnosis (10 Marks)

QUESTION THREE

a) You have been awarded a research grant to assess yield losses due to maize lethal necrosis disease in Embu County using the experimental method. Describe how you would carry out this study. (10 Marks)

b) Discuss plant disease diagnosis for non-infectious diseases causing agents. (10 Marks)

QUESTION FOUR

a) Discuss collection of samples for diagnostic purposes (14 Marks)

b) A farmer brings you a plant sample which is infected by a pathogen that you do not know. Briefly outline the procedure you will follow to prove the causal agent of the disease. (6 Marks)

QUESTION FIVE

a) Outline any two techniques used in the preservation of fungal cultures in the laboratory (10 Marks)

b) Outline how you would extract nematodes from a soil sample using the Baermann's funnel (10 Marks)

--END--