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University Examinations 2013/2014

SECOND YEAR, SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR
OF SCIENCE IN HORTICULTURE

AHS 2102: GENERAL MICROBIOLOGY

DATE: DECEMBER 2013

TIME: 2 HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE – (30 MARKS)

- a) Define the following terms as used in applied bacteriology. (6 Marks)
- Psychrophiles
 - Mesophiles
 - Thermophiles
 - Thermal death point
 - Thermal death time
 - Taq Polymerase
- b) Outline the Koch postulates which help identify the etiological cause of disease and state cases where they do not apply. (8 Marks)
- c) Describe the major steps involved in replication of animal viruses. (8 Marks)
- d) Giving an example in each case, describe vascular wilt fungi and the rust fungi. (8 Marks)

QUESTION TWO (20 MARKS)

- a) State four important uses of alginate. (2 Marks)
- b) Describe the cell structure of gram positive bacteria. (3 Marks)
- c) Using an example of your choice, describe an agricultural enterprise based on application of microbiology. (5 Marks)
- d) Describe streak plate method of isolating a pure bacteria culture from a mixture. (10 Marks)

QUESTION THREE (20 MARKS)

- a) Describe mycorrhiza fungi. (5 Marks)
- b) Outline the most common ingredients of culture media. (5 Marks)
- c) Discuss control of micro-organisms using dry and moist heat methods. (10 Marks)

QUESTION FOUR (20 MARKS)

- a) Describe how resistance (R) genes work against plant viruses. (5 Marks)
- b) Discuss economic importance of micro-organisms. (15 Marks)

QUESTION FIVE (20 MARKS)

- a) Differentiate between the root – knot nematodes and cyst nematodes. (5 Marks)
- b) Discuss the general considerations for sterilization and disinfection. (15 Marks)