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UNIVERSITY OF SWAZILAND
Faculty of Health Science

Department of Environmental Health
Sciences

Final Examination 2007

- TITLE OF PAPER : VECTORS AND VERMIN CONTROL
- COURSE CODE : EHS 203
- DURATION : 3 HOURS
- MARKS : 100
- INSTRUCTIONS : READ THE QUESTIONS & INSTRUCTIONS CAREFULLY
- : ANSWER FIVE QUESTIONS
- : EACH QUESTION CARRIES 20 MARKS
- : NO PAPER SHOULD BE BROUGHT INTO NOR OUT OF THE EXAMINATION ROOM
- : BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER

DO NOT OPEN THE QUESTION PAPER UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR.

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1. (a) Briefly discuss the principles of disease transmission involving arthropods. [14 marks]
 (b) Give three (3) examples of arboviruses that are transmitted by mosquitoes and give an example of disease for each arbovirus. [6 marks]

2. a) Discuss zoonoses [5 marks]
 b) Classify zoonoses by different types of transmission cycles [15marks]

3. Arthropods transmit different types of pathogens to man and animals; examples of such pathogens are given in the table below. Fill in this table by giving relevant examples for each cell numbered 1 to 20. [20 marks]

Pathogen Type	Pathogen designation	Disease caused	Vector	Mode of transmission	Geographical distribution
Viruses	YF(<i>yellow fever</i>)	1	2	3	4
Rickettsiae	5	Typhus	6	7	8
Bacteria	<i>Yersinia pestis</i> <i>Borelia</i>	9	10	11	12
Protozoa	13	14	Tsetse flies	15	16
Filarial nematodes	17	Onchocerciasis	18	19	20

4. There is neither war nor any animal that has killed more people on the face of the earth than mosquitoes and they still continue to do so.
 - (a) Discuss briefly each stage of the life cycle of mosquitoes [12]
 - (b) Give only four (4) differences between the anopheles mosquitoes and the Culicine mosquitoes [8]

5. Briefly explain how the following factors affect transmission of zoonotic diseases.
 - (a) Animal behavior. [4]
 - (b) Human demography. [4]
 - (c) Human behavior. [4]
 - (d) Environmental conditions such as climate. [4]
 - (e) Vector life span [4]

- 6.
- a) What is the importance of rodents in public health? [5]
 - b) Give the three different types of rats and explain their differences [6]
 - c) How would you effectively control the proliferation of rats (give 5 methods) [5]
 - d) How can rats presence be determined in the premises? [4]
- 7.
- a) Explain briefly, the action of chemical insecticides in pest control. [6]
 - b) Why were the achievements in the use of chemical insecticides diminished in the 1960s? [4]
 - c) briefly explain the phenomenon of synergism and antagonism in the use of insecticides [10]
- 8.
- a) What are human activities which predisposes man to venomous animals? [5]
 - b) List three (3) venomous invertebrate animals and two (2) venomous vertebrate animals. [5]
 - c) What are preventative measures for bites and stings by venomous animals? [10]